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Reports of
The Princeton University Expeditions
to Patagonia, 1896-1899

J. B. HATCHER, IN CHARGE

EDITED BY

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VOLUME II—ORNITHOLOGY

PART IV

ANATIDÆ—TYTODIDÆ

BY

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PRINCETON UNIVERSITY

ASSOCIATED WITH

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Order PELECANIFORMES.

Sharpe, Classif. Bds., p. 76 (1891); Sharpe, Hand-List Bds., i. p. 232 (1899).

Family PHALACROCORACIDÆ.

Ogilvie-Grant, Cat. Bds. Brit. Mus., xxvi. p. 330 (1898); Sharpe, Hand-List Bds., i. p. 232 (1899).

Genus PHALACROCORAX Brisson.

Type.

- Phalacrocorax*, Brisson, Orn. vi. p. 511 (1760); Ogilvie-Grant, Cat. Bds. Brit. Mus. xxvi. p. 330 (1898); Sharpe, Hand-list Bds. i. p. 232 (1899) *P. carbo*.
Carbo, Lacepède, Mem. l'Inst. Paris, iii. p. 515 (1801); Meyer & Wolf, Taschenb. Deutsch. Vog. ii. p. 576 (1810) *P. carbo*.
Haliæus, Illiger Prodrömus, p. 279 (1811) *P. carbo*.
Gulosus, Montagu, Suppl. Orn. Dict. p. 5 of Catalogue at end of vol. (1813) *P. graculus*.
Carbonarius, Rafinesque, Analyse, p. 72 (1815) *P. carbo*.
Hydrocorax, Vieillot (nec Brisson, 1760), Analyse, p. 63 (1816); id. Nouv. Dict. d'Hist. Nat. viii. p. 82 (1817) *P. carbo*.
Graucalus, G. R. Gray (nec Cuvier, 1817), List Gen. B. ed. 2, p. 101 (1841); id. in Dieffenb. Trav. N. Zeal. ii App. p. 201 (1843) *P. carbo*.
Graculus, G. R. Gray, Voy. Erebus & Terror, Birds, p. 19 (1845) *P. albiventer*.

NOTE.—The authors of Volume II of the Princeton Patagonian Expedition died about the time of the appearance of Part 2—Mr. Scott on August 23, 1910, and Dr. Bowdler Sharpe on December 25, 1909.

Arrangements were then made with Dr. Witmer Stone to see the remainder of the work through the press, and to complete such portions as were left unfinished by the original authors.

The manuscripts left by the latter were practically completed to the end of the Accipitri-formes and these have been published with but little alteration. From this point on, however, Dr. Stone will be responsible for the text, which will be based upon an independent study of the collection and the literature, while making use, so far as possible, of the notes and memoranda left by the former authors.—EDITOR.

- Graculus*, Reichenb. Nov. Synop. Av. pl. cclxxviii. no. 2304 (1850) *P. javanicus*.
Hypoleucus, Reichenb. Nat. Syst. Vog. p. vii. (1852) . . . *P. hypoleucus*.
Stictocarbo, Bonap. C. R. xli. p. 1115 (1855). *P. punctatus*.
Sticticarbo, Bonap. Consp. Av. ii. p. 174 (1855). *P. gaimardi*.
Urile, Bonap. Consp. Av. ii. p. 175 (1855) *P. bicristatus*.
Leucocarbo, Bonap. Consp. Av. ii. p. 176 (1855) *P. bougainvillii*.
Microcarbo, Bonap. Consp. Av. ii. p. 177 (1855). . . . *P. melanoleucus*.
Halictor, Heine, J. F. O. 1860, p. 202 *P. pygmaeus*.
Melanocarbo, Bernst. Dagboek, p. 119 (1883) *P. melanoleucus*.
Geographical Range.—Nearly cosmopolitan; not found in the Central Pacific.

PHALACROCORAX CIRRIGER King.

- Phalacrocorax cirriger*, King, Zool. Journ. IV. p. 103 (1829: Straits of Magellan).
Pelicanus goemardi, Gray in Griff. ed. Cuv. Anim. Kingd. III. p. 592 (1829).
Carbo gaimardi, Less. Traité d'Orn. p. 605 (1831: San Lorenzo); Cass. U. S. Expl. Exped. p. 376 (1858: Chili: San Lorenzo, breeding).
Phalacrocorax gaimardi, Fraser, P. Z. S. 1843, p. 119 (Valparaíso Bay); Gray, List Birds part iii. p. 186 (1844: Port St Julian); Hartl. Naum. 1853, p. 219 (Valdivia); Cunn. Nat. Hist. Str. Magell. pp. 365, 432 (1871: Chili); Scl. & Salv. Nomencl. Av. Neotr. p. 124 (1873); Salv. P. Z. S. 1883, p. 427 (San Lorenzo); Tacz. Orn. Pérou, III. p. 431 (1886); Macfarl. Ibis, 1887, p. 207 (Chilian Coasts); Philippi, Ornith. IV. p. 160 (1888: Atacama); Oust. Miss. Scient. Cap Horn, Ois. p. 156 (1891); James, New List Chil. B. p. 8 (1892); Berl. & Stolz. P. Z. S. 1892, p. 399; Lane, Ibis, 1897, p. 187 (Coral, Valdivia); Grant, Cat. B. Brit. Mus. XXVI. p. 353 (1898); Sharpe, Hand-list B. I, p. 232 (1899); Albert, Contr. Estud. Aves Chil. II. p. 355 (1899); Martens, Vög. Hamb. Magalh. Sammlr. Vög. p. 22 (1900).
Graculus gaimardi, Gray, Gen. B. III. p. 667 (1845); Desmurs in Gray Hist. Chil. Zool. I. p. 487 (1847); Reichenb. Syst. Av. Natatores, pl. xxxiii, fig. 370 (1848); Gray, Handl. B. III. p. 129, no. 11141 (1871).

Halieus gaimardii, Tschudi, Faun. Peru. Orn. p. 313 (1845-46).

Sticticarbo gaimardi, Bonap. Consp. Av. II. p. 174 (1855).

Graculus gaimardii, Schl. Mus. Pays-Bas, VI. Pelic. p. 22 (1863; Coast of Chili); Pelz. Reis. Novara, Vög. p. 158 (1865: Chiloe).

Halieus cirriger, Burm. An. Mus. Nac. Buenos Aires, part X. p. 249 1888: South Patagonia).

GENERAL DESCRIPTION.

Size.—Total length, about 28.00 inches.

Wing, 9.7 inches.

Culmen, 2.3 inches.

Tail, 4.0 inches.

Tarsus, 1.9 inches.

Color.—General color, dark smoky grey.

Head: Dark smoky grey; in the breeding season there are some scattered plumules forming a whitish patch.

Neck: Like the head, but generally lighter beneath. There is an elongate white area on either side. In the breeding season there are some whitish plumules like those behind the eye on the front of the neck.

Back: Upper back smoky, becoming silvery grey on the exposed parts, each feather rather broadly margined with dull brownish. Lower back, rump and upper tail coverts dark smoky grey.

Tail: Dull brownish black. Fourteen rectrices.

Wings: All the quills dull brownish black; scapulars smoky, becoming silvery greyish toward the exposed surfaces, each feather margined with dull brown; wing-coverts like the scapulars; lower wing-coverts and axillaries smoky greyish.

Lower parts: Smoky grey, paler than the shade prevailing above.

Bill: "Culmen cadmium-yellow, greenish brown along the top, and shading into orange-vermilion towards the base and on the bare patch in front of the eye; mandible similar but less brightly colored" (A. A. Lane).

Feet: "Legs, feet and webs bright coral red" (A. A. Lane).

Iris: "Iris grey" (A. A. Lane).

The sexes are alike in full plumage.

Young birds of the year are dark brown in general color, the wings and under parts being lighter, with an admixture of whitish feathers.

The white areas on the sides of the neck show plainly in this stage and some feathers of the adult dress are found on the upper back and among the wing-coverts and scapulars.

Geographical Range.—Coasts of Peru and Chili and the Western Reaches of the Straits of Magellan and Fuegian waters; rare or casual in the eastern parts of the Straits.

The naturalists of the Princeton Expeditions did not meet this species of cormorant in their explorations, nor was this to be expected from what we know of the distribution of the birds and their claim to consideration as a part of the fauna of Patagonia; they have been found at Port San Julian on the Atlantic Coast of Patagonia but only casually; they occur at western points in the Straits of Magellan, but there is so far no record of their regular occurrence so far to the eastward even as Sandy Point.

At Chiloe Island, Dr. Cunningham saw these birds and he writes: "The 30th [May] was fair, though still blowing pretty hard. In the forenoon a large flock of very beautiful cormorants (*Phalacrocorax gaimardi*), with bluish grey and white plumage, yellow bills and scarlet legs, lighted on the water not far from the ship, but we were unable to procure one. One of the officers recognized them as specimens of a species of which he had seen two examples on one occasion on the Messier Channel, but there they must be very rare, as I never saw any to the south of Chiloe." (Cunn. Nat. Hist. Strts. Mag. 1871.)

PHALACROCORAX VIGUA (Vieillot).

Zamaragullon negro, Azara, Apunt. iii. p. 393 (1805).

Hydrocorax vigua, Vieill. Nouv. Dict. d'Hist. Nat. VIII. p. 90 (1817, ex Azara.)

Carbo graculus (nec Linn.), Temm. Man. d'Orn. II. p. 897 (1820).

Pelecanus vigua, Vieill. Enc. Méth. I. p. 342 (1823).

Halius brasiliannus, Licht. Verz. Doubl. p. 86 (1823).

Carbo brasiliannus, Spix. Av. Bras. II. p. 83, pl. cvi. (1825).

Phalacrocorax niger, King, Zool. Journ. IV. p. 101 (1829: Straits of Magellan).

Halius brasiliannus, Gray in Griff. ed. Cuv. Anim. Kingd. III. p. 591 (1829).

Carbo mysticalis, Less. Traité d'Orn. p. 604 (1831); Puch. Rev. et Mag. de Zool. 1850, p. 628.

- Phalacrocorax graculus* (nec Linn.), Gould, B. Eur. V. pl. 408 (1837).
Phalacrocorax brasiliensis, Fraser, P. Z. S. 1843, p. 119 (Chili); Macfarl. Ibis, 1887, p. 207 (Coast of Chili); Oust. Miss. Sci. Cap Horn Dis. p. 142 (1891).
Phalacrocorax brazilianus, Gray, List B. part. iii. p. 185 (1844: Valparaiso).
Graculus brasiliannus, Gray, Gen. B. III. p. 667 (1845); Desmurs, in Gray's Hist. Chil. Zool. I. p. 490 (1847); Reichenb. Syst. Av. Natatores, pl. xxxiii. figs. 881-882 (1848); Coues, Bull. U. S. Nat. Mus. VII. p. 24 (1877: Concepcion Bay, Chili).
Graculus mysticalis, Gray, Gen. B. III. p. 668 (1845).
Phalacrocorax brasiliannus, Hartl. Ind. Azara, p. 27. (1847); id. Naum. 1853, p. 219 (Valdivia); Scl. & Salv. Ibis, 1868, p. 146 (Conchitas), 1870, p. 499 (Goods Bay, Str. Magell.); Cunn. Nat. Hist. Str. Magell. p. 483 (1871); Scl. & Salv. Nomencl. Av. Neotrop. p. 124 (1873); Durnf. Ibis, 1876, p. 162 (Flores Isl., Buenos Aires), 1877, p. 40 (Chuput Valley), p. 188 (Barradero, Buenos Aires), 1878, p. 398 (Sengel and Sengelen); White, P. Z. S. 1882, p. 624 (Salta); Salvin, P. Z. S. 1883, p. 427 (Paracas Bay); Vincig. Patag. p. 26 (1883); id. Boll. Soc. Geogr. Ital. (2) IX. p. 799 (1884); Barrows, Auk, I. p. 270 (1884: Concepcion); Berl. J. f. O. 1887, p. 28 (Rio Pilcomayo); Scl. & Huds. Argent. Orn. II. p. 91 (1889); Graham Kerr, Ibis, 1891, p. 270 (Rio Pilcomayo), 1892, p. 144 (Paraná: Paraguay, Lower Pilcomayo); James, New List Chil. B. p. 8 (1892); Aplin, Ibis, 1894, p. 197 (Flores Isl.; Montevideo; Rio Negro); Lane, Ibis, 1897, p. 186 (Chili); Schallow, Zool. Jahrb. Suppl. IV. p. 688 (1898: Island of Pajaros: Villarica: Lake Llanquihue); Albert, Contr. Estud. Av. Chil. II. p. 358 (1899).
Graculus magellanicus, Reichenb. (nec Gm.) Syst. Av. Natatores, pl. CCCXLIX (1848).
Graculus brasilianna, Bp. Consp. Av. II. p. 172 (1855).
Haliæus brasiliensis, Burm. J. f. O. 1860, p. 267 (Paraná).
Haliæus brasiliannus, Burm. La Plata Reis. II. p. 520 (1861: Rio Paraná); C. Burm. An. Mus. Nac. Buenos Aires, III. part X, p. 249 (1888: Patagonia).
Graculus glaucus, Schl. (nec Reichenb.) Mus. Pays Bas, VI. Pelec. p. 17 (1863: Straits of Magellan).
Graculus brasiliensis, Pelz. Reis. Novara, Vög. p. 158 (1865: Chili); Gray, Hand-list B. III. p. 128, no. 11127 (1871).

Phalacrocorax vigua, Ridgw. Proc. U. S. Nat. Mus. xii. p. 138 (1889: Port Otway, Chili); Grant, Cat. B. Brit. Mus. xxvi. p. 378 (1898); Sharpe, Hand-list B. I. p. 233 (1890); Martens, Hamb. Magalh. Sammelr. Vög. p. 22 (1900); Salvad. Ann. Mus. Genov. (2) xx. p. 627 (1900: Isla de Leones, Santa Cruz, Jan.).

Phalacrocorax sp. Holland, Ibis, 1892, p. 204 (Estancia Espartilla), 1897, p. 168.

Falacrocorax brasiliensis, Carbajal, La Patagonia, part II. p. 277 (1899).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8995, October, 1897, Province of Buenos Aires. From the Museo de La Plata, Original Number, 51.

Total length, about 30.00 inches.

Wing, 11.1 inches.

Culmen, 2.25 inches.

Tail, 7.0 inches.

Tarsus, 2.0 inches.

The adult female is appreciably smaller than the adult male but identical in color and decoration in the breeding season.

Color.—General color: Shining glossy black with a slight greenish tint.

Head: Black; in the breeding season a tuft of decomposed whitish plumules on each side above the ear. There is also a line of similar feathers forming an irregular supraciliary stripe from the lores back.

Neck: Black; a narrow white band defines the upper feathering of the throat where it borders the naked skin of the pouch; this marking reaches up in some specimens almost to the eye; the sides of the neck are decorated with scattered whitish plumules in the breeding season. The gular pouch is dusky yellowish in color.

Back: The middle and lower back, the rump and upper tail-coverts glossy black; the upper back has distinct lanceolate feathers of an ashy shade, each one margined or bordered with black; some of these feathers have a median black line along the shaft.

Tail: Dull black. There are twelve rectrices.

Wings: The quills are brownish black; on the exposed surfaces of the secondaries and tertials this color is obscured by a heavy shading of ash; the scapulars are like the feathers of the upper back, lanceolate in shape,

deep ash in color with narrow margin of black defining each and often a black stripe along the shaft; upper wing-coverts like the scapulars; lower wing-coverts and axillaries dull black.

Lower parts: Uniform glossy black with a greenish tint.

Bill: Dull horn-brown, deep in shade along the culmen and becoming yellowish along the edges of the mandibles; the sides of both mandibles have the surfaces rough, a condition most apparent in breeding birds.

Feet: Legs and feet dark greenish black.

Iris: Dark blue in the breeding season. Green in immature birds (Pozzi).

Adult birds not breeding are similar in general appearance, but the white plumes are wanting, the white defining margin at the border of the pouch is not present, and the upper neck, the head and lower neck and breast are shaded strongly with snuff-brown dark in tone.

Immature birds and young of the year are much browner beneath and the distinct admixture of buffy feathers is marked, beginning on the head and extending down the neck well below the breast. The upper parts are similar to those of adults, but the ash is lighter in tone. This description is based on five birds in the Pozzi Collection, Princeton University Museum, taken at Ensenada, Province of Buenos Aires in May, 1895.

Geographical Range.—Atlantic and Pacific Coasts of South America; north to the coasts of Central America; there is a bird in the Dresser Collection, British Museum, labeled Fort Stockton, Texas; Patagonian Coasts and inland waters.

This cormorant does not appear to be very common on the southern sea-coasts, nor in the interior of South Patagonia, but is abundant in both the interior and on the coast to the north; there are records of its occurrence at many points in Patagonia proper as well as in the regions about that country, but it was not recorded or collected by the Princeton Expeditions, nor are there any specimens in the large series of birds in the British Museum from the Straits of Magellan or the adjacent littoral.

Dr. Coppinger furnishes the following biography of this bird as observed by him in the Straits; evidently the "jet black bird" called by him *Phalacrocorax imperialis* refers to this species, *P. vigua*, the only wholly black cormorant of the region.

"There was a 'rookery' of the red-cered cormorant (*Phalacrocorax magellanicus*) near Cockle Cove (October, 1879), but the nests were

placed on almost inaccessible ledges in the face of the rocky cliff, which was streaked all over with vertical white lines from the droppings of the birds. This species of cormorant is very abundant throughout all the channels. A second species, a jet black bird (*Phalacrocorax imperialis*), builds its nest in trees; and there was a characteristic 'rookery' of this tree cormorant at Port Bermejo, where we anchored in the month of November. It was a quiet, sequestered place, where two old and leafless beech trees overhung the margin of an inland pond. The nests were constructed of dried grass, and were placed among the terminal branches of the trees. These funereal-looking birds, sitting on or perching by their scraggy nests on the bare superannuated trees, formed a truly dismal spectacle. They uttered, too, a peculiar cawing sound, which was not cheerful, and so remarkably like the grunting of a pig, that before I saw the rookery I was for some time peeping through the bushes and looking for tracks, imagining myself in the neighbourhood of some new pachydermatous animal. It seemed as if the birds took the grunting business by turns, only one at a time giving tongue.

"I was surprised to see how neatly they alighted on the branches. There was none of the awkward shuffling motion of wings and feet which they exhibit when alighting on the ground or on the water; but, on the contrary, each fresh arrival soared on to its perching place as smoothly and cleverly as a hawk, and grasped the branch firmly with its claws. At another tree rookery in Swallow Bay I noticed that when some of the birds on flying in observed my presence, they would rise high above the tree, and remain soaring around in circles till I had gone away. The method of soaring was to all appearance as smooth, steady, and devoid of effort as that of a vulture. And yet the cormorant is a heavy short-winged bird, that rises from the ground with difficulty, and whose ordinary method of flight is most laborious." (Cruise, "Alert," 1883, pp. 106-107.)

PHALACROCORAX MAGELLANICUS (Gmelin).

Magellanic Shag, Lath. Gen. Syn. iii. pt. 2, p. 604 (1785: Tierra del Fuego). *Pelecanus magellanicus*, Gm. Syst. Nat. I. p. 576 (1788) ex Lath.; Forst.

Descr. Anim. p. 356 (1844: Tierra del Fuego: Staten Isl.)

Hydrocorax magellanicus, Vieill. N. Dict. d'Hist. Nat. viii. p. 87 (1817).

Hydrocorax leucogaster, Vieill. tom cit. p. 90.

- Phalacrocorax magellanicus*, Stephens in Shaw's Gen. Zool. xiii. p. 89 (1825); Gray, List B. part iii. p. 186 (1844: Str. Magellan: Falkland Islands); Jacq. & Puch. Voy. Pole Sud. iii. p. 128 (1853); Scl. P. Z. S. 1860, p. 391 (Falkland Islands); Abbott, Ibis, 1861, p. 167 (loc. cit.); Scl. & Salv. Ibis, 1870, p. 499 (Port Churruca); Cunn. Nat. Hist. Str. Magell. p. 478 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 124 (1873: Chili: Str. Magellan: Falkland Isl.); Sharpe, P. Z. S. 1881, p. 11 (Trinidad Channel); Vincig. Exp. Austr. Arg. p. 58 (1883); id. Patag. p. 59 (1882); Coppinger, Cruise Alert, p. 106 (1883: Cockle Cove); Oust. Miss. Scient. Cap Horn, Ois. p. 150 (1891); Grant, Cat. B. Brit. Mus. xxvi. p. 388 (1898); Schalow, Zool. Jahrb. Suppl. IV. p. 681, Taf. xxxviii (1898: Valparaíso; Lagartiza Island; Calbuco, Dec.); Sharpe, Hand-list B. I. p. 234 (1899); Albert, Contr. Estud. Aves. Chil. II. p. 352 (1899); Martens, Vög. Handb. Magalh. Sammelr. p. 22 (1900); Salvad. Ann. Mus. Genov. (2) xx. p. 628 (1900: Penguin Rookery: Porto Cook).
- Phalacrocorax sarmientonus*, King, P. Z. S. 1831, p. 30 (Straits of Magellan).
- Phalacrocorax erythropis*, King, tom cit. p. 30 (Straits of Magellan).
- Carbo leucotis*, Less. Traité d'Orn. p. 604 (1831: Falkland Isl.)
- Graculus magellanicus*, Gray, Gen. B. III. p. 667 (1845); Desmurs in Hist. Chil. Zool. I. p. 492 (1847: Tierra del Fuego); Schl. Mus. Pays Bas VI. Pelec. p. 21 (1863: part); Pelz. Reis. Novara Vög. p. 159 (1865: Chiloe); Gray, Handl. B. II. p. 128, no. 11136 (1871: Straits of Magellan: Falkland Isl.).
- Graculus sarmientonus*, Gray, Gen. B. III. p. 668 (1845); Desmurs in Gray Hist. Chil. Zool. I. p. 490 (1847: Straits of Magellan).
- Cormoran magellanique*, Hombr. & Jacq. Voy. Pole Sud. Atlas, Ois. pl. 31^{bis}. (1842-53).
- Urile magellanicus*, Bonap. Consp. Av. II. p. 177 (1855); Ridgw. Proc. U. S. Nat. Mus. xii. p. 139 (1889: San Martin Isl.).
- Hypoleucus magellanicus*, Bonap. C. R. xlii. p. 775 (1855).
- Phalacrocorax mentalis*, Temm. Teste Bonap. Consp. Av. II. p. 175, (1855).
- Carbo magellanicus*, Cass. U. S. Expl. Exped. Birds, p. 370 (1858: Orange Harbour, Tierra del Fuego).
- Halieus penicillatus* (nec Brandt) Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 249 (1888: Santa Cruz, S. Patagonia).

GENERAL DESCRIPTION:

Size.—Adult male.

Total length, 26.00 inches.

Wing, 10.5 inches.

Culmen, 2.0 inches.

Tail, 5.5 inches.

Tarsus, 2.1 inches.

The adult female is somewhat smaller than the male, but similar in color.

Color.—Adults in breeding plumage.

General color: Black or dark shining green above; from the chest backward, white below.

Head: Black with steel-blue gloss; there is a small white spot on the ear-coverts; long, white, filamentous feathers are scattered irregularly over the ground color of the head. There is a crest of feathers on the forehead, fan-shaped from the front view.

Neck: Black with deep steel-blue gloss, and with the same sparse white feathers appearing.

Back: Interscapular region dull glossy sage green, each feather indistinctly margined with a darker shade of the same color, giving a scaled appearance to the whole; lower back, rump and upper tail-coverts black, with a strong gloss of deep steel-blue. There is here as on the head and neck an admixture of long, narrow, white feathers.

Tail: Black, shaded with dull brownish. Twelve feathers.

Wings: Scapulars and wing-coverts, exposed surfaces of the secondaries and tertials, dull sage-green, with an indistinct shading of a darker tone, making an undefined margin to each feather. Primaries blackish with a dull brown shading.

Lower parts: Flanks, thighs and under tail-coverts, as well as the throat, black with a strong gloss of deep steel-blue; the rest of the under parts pure shining white. In all the dark parts there is a scattered admixture of long, narrow white feathers.

Bill: Deep yellow; the carunculations and eyelids shading into blood red.

Feet: Yellow shaded with brownish.

Iris: Dull reddish brown. In the non-breeding season brown of varying shade; in young birds grey.

Adult birds in the non-breeding plumage lack the black throat, the entire neck beneath being white. The colors of the carunculations are duller in tone, often yellowish; the crest is not present; the long white feathers or plumes of the breeding period, at which time they decorate the darker portions of the plumage, are absent. In the large series of birds of this sort in the British Museum, there appears every stage of transition between the two phases of plumage of the adult birds.

Immature birds seem like non-breeding adults but have the dark parts duller and the white below more restricted; especially on the throat, where this color is often only a broad median line.

The following descriptions of the soft parts have been published:

"Female: Trinidad Channel, February 27, 1879. Iris reddish brown; lids and wattled skin of a blood-red colour; legs grey in front, dusky black behind." (Sharpe, P. Z. S. 1881, p. 11.)

"Iris red; bare skin of face red.

"One of the adults had a white spot on the ear-coverts and on the upper throat, being in transition from summer to winter plumage. The immature female had the abdomen thickly marked with very dark brown.

"This species is particularly common in the Straits of Magellan. The breeding-season was over when we were there. During the first week in February I saw numbers in all the anchorages visited, feeding amongst the seaweed." (M. J. Nicoll, Orn. Jour. Voy. round World, Ibis, Jan. 1904, p. 48.)

Geographical Range.—Southern Coasts of Chili and Patagonia; the Straits of Magellan and Fuegian waters; the Falkland Islands.

This is one of the commoner cormorants in the Straits of Magellan where they appear to be resident; they are salt-water birds, seldom of occurrence in the interior or even away from the coast and were not recorded on any of the salt lakes inland by Mr. Hatcher and his associates. There are records of the birds as far north as Valparaiso on the Pacific Coast and on the Atlantic shore near the mouth of the Rio Santa Cruz of Patagonia.

Some idea of the life of the birds is gained from the following vivid sketch: Dr. Coppinger speaks of the birds in connection with *P. vigua* and says:

"One day, when we were lying at our old anchorage in Tom Bay, I saw a cormorant rise to the surface with a large fish in its mouth, which,

for several minutes, it vainly attempted to swallow. I noticed it chucking the fish about until it had got hold of it by the head, but even then it seemed unable to 'strike down' the savoury morsel. A flock of dominican gulls now appeared on the scene, and seeing the state of affairs at once swooped down on the unlucky cormorant, but the wily bird discomfitted them by diving and carrying the fish with it. It was now most ludicrous to witness the disappointed appearance of the gulls, as they sat in a group on the water looking foolishly about, and apparently overcome with grief at their inability to follow up the chase by diving. After an interval of about half-a-minute the cormorant reappeared some distance off with the fish still in its mouth, and now one of the gulls succeeded at last in snatching the fish from its grasp, and flew away with it rapidly up a long winding arm of the sea. At this critical moment a skua (*Stercorarius chilensis*), hove in sight, and gave chase to the fugitive gull, until, unfortunately, a turn in the creek concealed both birds from our sight, but left us to safely conjecture that the last comer had ultimately the satisfaction of consuming the wretched fish.

"I have often wondered at the apparently stupid manner in which long files of cormorants will continue on their course over the surface of the water without deviating so as to avoid a dangerous locality until they are close to the place or object to be avoided. Many persons are doubtless familiar with the appearance of these birds as they fly towards a boat which happens to lie in their route, and may remember the startled way in which, when about twenty or thirty yards off, they will alter their course with a vigorous swish of the tail and sheer off confusedly from the danger. Again, how eager they are to take advantage of the (probably) acuter vision of terns and gulls, when they observe that either of the latter have discovered a shoal of fish. Is it not therefore probable that cormorants are naturally short-sighted?—a disadvantage for which they are amply compensated by their superior diving powers." (Cruise, "Alert," 1893, pp. 110–111.)

PHALACROCORAX ATRICEPS King.

Phalacrocorax carunculatus, Stephens (nec Gm.) in Shaw's Gen. Zool. xiii. p. 94 (1825: Staten Island); Gould Voy. Beagle, Birds, p. 145 (1841: Port St. Julian, Patagonia); Pelz. Reis, Novara, Vög. p. 159 (1865: Chiloe); Scl. & Salv. Ibis, 1869, p. 284 (Straits of Magdalena); iid. Ibis, 1870, pp. 499, 500 (Mayne Harbour: Port Churruca);

- Newton, t. c. p. 504 (Str. Magdalena, eggs); Cunnh. Nat. Hist. Str. Magell. pp. 191, 271, 275 cum tab (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 124 (1873: Chili: Str. Magellan); Vincig. Patag. p. 26 (1883); id. Boll. Soc. Geogr. Ital. (2) IX. p. 799 (1884); Oust. Miss. Sci. Cap Horn, Oiseaux, p. 144, pl. vi. back fig. part (1891).
- Phalacrocorax atriceps*, King, Zool. Journ. IV. p. 102 (1829; Straits of Magellan); Grant, Cat. B. Brit. Mus. xxvi. p. 390 (1898); Sharpe, Hand-list B. I. p. 234 (1899); Martens, Hamb. Magalh. Sammlr. Vög. p. 22 (1900); Salvad. Ann. Mus. Genov. (2) xx. p. 627 (1900: Isla de Leones, Santa Cruz).
- Phalacrocorax imperialis*, King, P. Z. S. 1831, p. 30 (Straits of Magellan); Scl. & Salv. P. Z. S. 1878, p. 652 (Cove Harbor, Messier Channel); iid. Voy. Chall. Birds, p. 120, pl. xxv. fig. 1 (1880); Forbes, Ibis, 1893, pp. 534-537, 541.
- Phalacrocorax cirrhatus*, Gray, List B. part III. p. 186 part (1844); Scl. & Salv. Ibis, 1868, p. 189 (Straits of Magellan); Schalow, Zool. Jahrb. Suppl. IV. p. 683.
- Graculus cirrhatus*, Gray, Gen. B. III. p. 667 (1845); Des Murs in Gay Hist. Chil. Zool. II. p. 490 (1847).
- Hypoleucus cirrhatus*, Bonap. Consp. Av. II. p. 174 (1855: Chili).
- Urile carunculatus*, Bonap. t. c. p. 176 (Straits of Magellan).
- Graculus elegans*, Philippi, Wieg. Archiv. xxiv. p. 305 (1858: Chili).
- Graculus carunculatus*, Schl. (nec Gm.) Mus. Pays. Bas vi. Pelec. p. 20, part (1863: Straits of Magellan); Gray, Handl. B. III. p. 128, no. 11, 137 part (1871: Staten Isl.)
- Halieus atriceps*, Burm. Ann. Mus. Nac. Buenos Aires, III. part X. p. 249 (1888: Straits of Magellan).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 29.00 inches.

Wing, 11.0 inches.

Culmen, 2.3 inches.

Tail, 5.5 inches.

Tarsus, 2.7 inches.

The adult female is a little smaller than the male but is identical in color.

Color.—Adult male.

General color: Above glossy black, with green or blue tinge; below white; a white dorsal patch is generally present and an alar bar of white or whitish on each wing, is constant.

FIG. 253.

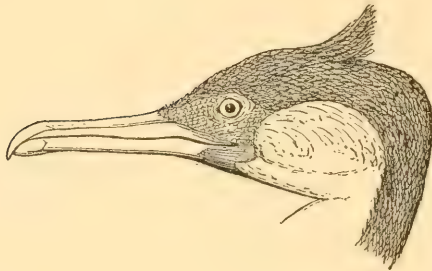


FIG. 254.



Phalacrocorax atriceps. P. U. O. C. 7912. Female. Profile of head. Bill and head from above. Reduced.

Head: Above black, with steel-blue gloss; there is an admixture of hair-like white feathers in the black of the sides of the head; the white of the neck invades the region of the side of the head so as to reach above and forward of the ears, which are therefore in the center of the white area; there is a well developed crest of black, shining feathers, which has a tendency to recurve forward.

Neck: Above glossy steel-blue black; this color does not reach down on the sides of the neck; below pure white with a silky sheen.

Back: Upper back and interscapular region dull bottle-green with a strong gloss and with no markings or shadings on the feathers, which present uniform color throughout; lower back, rump and upper tail-coverts uniform steel-blue black, very finely glossed and broken in most individuals by a white dorsal patch of varying shape and extent.

Tail: Blackish, with a decided dull green tint shading the feathers. There are twelve rectrices.

Wings: Dull, glossy bottle-green; the primaries brownish black; the

secondaries and tertials on their exposed surface uniform dull, glossy bottle-green; an alar bar of pure white extending from the base of the forearm well toward the wrist; this varies from three to four inches in length and is half to three quarters of an inch wide; under wing-coverts and axillaries dull blackish, with more or less glossing of green.

Lower parts: The flanks, thighs and under tail-coverts black, with a steel-blue gloss; the rest of the under parts pure white with a fine silky sheen.

Bill: Yellow, with strong shading of horn brown; the nasal caruncles, which are not prominent, yellowish green shading into bright blue on the naked skin about the eye.

Iris: Bright green in the breeding season; yellow grey to hazel brown at other times.

Feet: "Tarsi scarlet" (Darwin).

An immature female so far as plumage goes, but probably a bird which had passed one breeding season, is among the birds collected by Mr. Hatcher. It is catalogued 7912 in the University Museum and was taken on the coast near Mount Tigre, Southern Patagonia, August 18th, 1896. I am unable to refer this to young birds of the year. It has the upper parts ashy brown, the tips of many feathers being whitish, there is a decided and well grown crest, the white region on the head extends well forward, nearly to the eye, and passes above, wholly surrounding the ear; the alar bars are present but not well defined; there is no dorsal white patch; the under parts are pure white, as in adults, save that the thighs and under tail-coverts are black or brownish black; there are no carunculations about the face and the feathers reach unbroken to the upper point of the culmen and even the usual bare skin in front of the eyes is slightly feathered; the dry bill looks as if it had been dull brown in life, but the feet must have been, from their appearance, bright yellow.

Presumably immature birds are like the closely allied young of *Phalacrocorax albiventer*.

M. J. Nicoll (Ibis, Jan., 1904, p. 48), describes the colors of the eyes, etc., as follows: "Iris green; eyelids blue; face and nasal caruncles yellowish green.

Geographical Range.—South Patagonia on the Atlantic coast at least as far north as the mouth of the Rio Santa Cruz; the Straits of Magellan and Fuegian waters; South Georgia? Pacific Coast of South America as far north as Chiloe Island.

This cormorant appears to be common on the coast of Patagonia as far north as the mouth of the Santa Cruz River, in which vicinity the birds were found by Mr. Hatcher and his assistants. They met with the birds in the non-breeding period and were fortunate to preserve specimens at that season.

It appears that the bird called *Phalacrocorax carunculatus* by Dr. Cunningham (Nat. Hist. Strts. Magell., 1871, p. 271) was this bird, and his admirable description of its breeding on Santa Magdalena Island, not far from Elizabeth Island, in the Straits, is here appended.

"The most remarkable spectacle, however, was still to come. Pursuing our way over the island, we ere long reached some large hollows, which cormorants (*Phalacrocorax carunculatus*) had adopted as breeding-places. The birds were there congregated in their nests literally in thousands, forming a dense black mass covering a space of many yards; and, on being disturbed, rose into the air in a cloud, winnowing it with their wings so as to produce a sound resembling that of a strong breeze blowing, and almost concealing the heavens from view; while a number of skua gulls, associated with them, gave vent to a tumult of discordant cries. Their nests were regularly shaped flattened mounds, slightly excavated on the upper surface, and ranged in almost mathematical series, exactly a foot of space intervening between each nest. They were formed of dried grass and other herbage baked into a solid mass with earth and guano; and the generality contained from one to three greenish-white eggs about the size of that of a domestic fowl, and with a rough chalky surface." (Nat. Hist. Str. Magell. 1871, pp. 271-272.)

M. J. Nicoll says: "This fine cormorant is the most abundant of the genus in Magellan Straits and Smythe's Channel. I saw numbers at every anchorage. As a rule, the birds fly together in flocks." (Ibis, Jan., 1904, p. 48.)

PHALACROCORAX ALBIVENTER (Lesson).

Carbo albiventer, Less. Traité d'Orn. p. 604 (1831: Falkland Islands);

Puch. Rev. et. Mag. de Zool. 150, p. 627.

Phalacrocorax cirrhatus, Gray (nec Gm.) List B. Brit. Mus. part iii. p. 186 pt. (1844: Falkland Isl.: Port St. Julian, Patagonia).

Graculus cirrhatus, Gray (nec Gm.), Voy. Erebus & Terror, B. p. 19 (1845).

Graculus albiventer, Des Murs in Gay's Hist. Chil. Zool. I. p. 491 (1847).

Urile purpurascens, Bonap. Consp. Av. II. p. 117 (1855: Falkland Isl.).

Hypolencus purpurascens Bonap. C. R. XLII. p. 775 (1855).

Phalacrocorax carunculatus, Scl. (nec Gm.) P. Z. S. 1860, p. 391 (Falkland Islands); Abbott, Ibis, 1861, p. 166 (Falkl. Isl.); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 144 (pt.) pl. vi. front figure (1891).

Phalacrocorax albiventris, Scl., P. Z. S. 1879, p. 310 (Falkland Isl., eggs); id. & Salv. Voy. Chall. Birds, pp. 121, 157, pl. xxv. fig. 2 (1880); Forbes, Ibis, 1893, pp. 535, 540.

Phalacrocorax imperialis, Sharpe (nec King), P. Z. S. 1881, p. 11 (Tom Bay, Magellan).

Haliæus verrucosus, Burm. (nec Cab.), An. Mus. Nac. Buenos Aires, III. part X. p. 249 (1888: Patagonia).

Urile albiventer, Ridgw. Proc. U. S. Nat. Mus. xii. p. 139 (1889: San Martin Isl.)

FIG. 255.

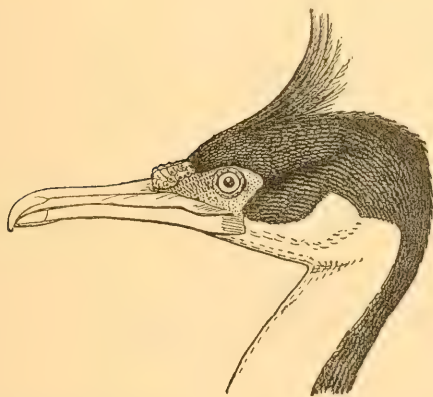
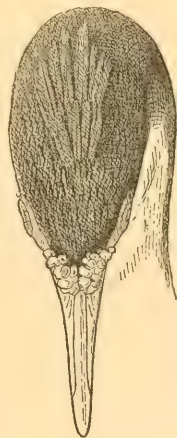


FIG. 256.



Phalacrocorax albiventer, P. U. O. C. 7911. Profile of head. Head and bill from above.
Reduced.

Phalacrocorax albiventer, Grant, Cat. B. Brit. Mus. xxvi. p. 392 (1898); Sharpe, Hand-list B. I. p. 324 (1899); Martens, Hamb. Magalh. Sammelr. Vög. p. 22 (1900: Falkland Islands), Salvad. Ann. Mus. Genov. (2) xx. p. 627 (1900: Penguin Rookery: Porto Cook).

Falacrocorax carunculatus, Carbajal (nec Gm.), La Patagonia, Part II. p. 277 (1900).

GENERAL DESCRIPTION:

Size.—Adult female, 7911 P. U. O. C., near Coy Inlet, Patagonia, 14th September, 1896. J. B. Hatcher.

Total length, about 28.00 inches.

Wing, 11.0 inches.

Culmen, 2.3 inches.

Tail, 5.5 inches.

Tarsus, 2.6 inches.

Adult birds do not seem to vary in size or plumage, the sexes being identical in appearance.

Color.—(Adult female cited above).

General color: Above glossy black, with bottle-green on wings; a white alar bar and the lower parts pure silky white with a fine sheen.

Head: Black above, with a pronounced recurved crest, the longest feathers one and three quarters inches, the whole glossed with steel-blue, often shaded with dull purple and steel-green; the black extends well down on the sides of the face below the eyes and covers the ears; a slight admixture of hair-like white feathers on the sides of the head about the ears and behind the eye.

Neck: Black, glossed with steel-blue deep in tone above, and pure white with a silky sheen below; the white extends to the base of the lower mandible and there is a pointed inter-ramal white feathering extending forward almost in line with the commissure of the bill.

Back: Upper back and interscapular region, dull bottle-green, with a strong gloss, but with no marks or shading on the feathers; lower back, rump and upper tail-coverts black, with a fine steel-blue sheen and gloss; there is in none of the specimens examined any trace of a white dorsal patch.

Tail: Dull brownish black; the shafts of the rectrices white for a third of their length; there are twelve rectrices.

Wings: Dull, glossy bottle-green; the primaries brownish black; secondaries and tertials on their exposed surfaces dull, glossy bottle-green; upper wing-coverts dull bottle-green, interrupted generally by a more or less perfect alar bar of pure white (some apparently adult individuals examined lack this alar bar); under wing-coverts and axillaries dull blackish brown, somewhat glossed with green.

Lower parts: Thighs and under tail-coverts glossy black, with steel-blue shading; the rest of the underparts pure white, with a silky sheen.

Bill: Horn-brown, with yellow and reddish shading; nasal caruncles markedly developed and reaching back to a line just in front of the eyes; deep cadmium in color, shading into French blue on the bare skin about the eye.

Iris: Green in the breeding season; at other times yellowish brown.

FIG. 257.



Detail of foot. *Phalacrocorax albiventer*. P. U. O. C. 7911. Reduced.

Feet: Cadmium yellow.

FIG. 258.

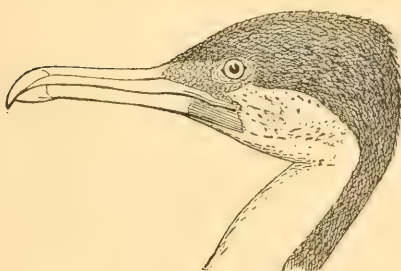


FIG. 259.



P. albiventer. P. U. O. C. 8312. Immature male. Profile and head. Head and bill from above. Reduced.

Immature birds (8312 P. U. O. C., Cape Fairweather, Patagonia, 12 February, and 8313 the same day and place) are ashy brown above, with lighter tips to the feathers, especially on the wings and back; the alar bar shows an indistinct dirty white area along the forearm; the color, ashy brown, of the sides of the head and face extends well down to below the commissure of the bill, making the white area on the throat narrow, com-

pared with *atriceps* in the same plumage; there are no nasal carunculations and the feathers reach to the base of the culmen; the lower parts are pure white, not as silky as in breeding birds; the thighs and under tail-coverts ashy brown.

A young bird, half grown, (8314 P. U. O. C., Cape Fairweather, 12 February, 1898) is still in the down stage of plumage, so far as the head and neck are concerned; these are covered with a thick fur-like down, snuff-brown

FIG. 260.

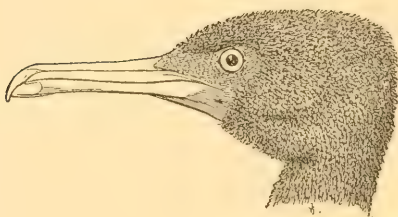


FIG. 261.



Phalacrocorax albiventer. P. U. O. C. 8314. Half grown bird in downy plumage. Profile of head and bill. Head and bill from above. Reduced.

in color; the rest of the body shows more or less down of the same shade and character; the wing-coverts, secondaries and tertials are well grown, as are the scapulars, all ashy brown, with a distinct shading or gloss of dull green; the alar wing-bar shows indistinctly; the tail is well grown, four inches long, but the primaries are short and concealed by the secondaries, which overhang them for at least two inches; the down of the back is mixed with ashy brown feathers and the down of the under parts is almost overgrown by the pure white feathers taking its place. Bill horn-brown; feet yellowish brown.

Geographical Range.—Coast of southern South America. As far north as Port San Julian on the Patagonian coast. The Straits of Magellan and Fuegian waters. The Falkland Islands.

The series of these cormorants procured at Cape Fairweather and other

coast points in Patagonia by Mr. Hatcher and his assistants seems to indicate a purely salt-water form, the birds not being recorded at any point away from the sea. The breeding season begins in late October and is probably at its height early in November and the birds are still found in the down, about two-thirds grown, in the middle of February.

The cormorant rookery spoken of by Dr. Cunningham in the following extract, was on Quartermaster Island, Tierra del Fuego, and it seems to have been this kind of bird (*P. albiventer*) which he discovered there; this was on the 6th of April and the rookery was not a breeding but only a roosting or resting place.

"After a time we reached a plateau at the top of some cliffs, and there beheld a most wonderful congregation of cormorants (*Phalacrocorax carunculatus*). On a moderate computation they must have numbered upwards of a thousand, and they presented a most peculiar appearance as they sat nearly erect, in regular ranks. As we ran up to them, it was most amusing to watch the difficulty which they experienced in taking flight, in consequence of being so closely packed together. Line after line hustled forwards for some paces, and then breaking up, flew over the cliffs into the sea below, where they swam out to a prudent distance. One or two, which had been hit with stones, lay on their backs on the beach for some minutes, emitting strange sounds, and waving about their splay feet in the air, in the most ridiculous manner, till they were sufficiently recovered to take to the water. The space of ground on which they had been assembled was worn perfectly bare of grass for several hundred yards, and the smell of decaying fish, the viscera of which were lying about in innumerable little heaps, was insupportable." (Cunn. Nat. Hist. Str. Magell. 1871, p. 191.)

Order CATHARTIDIFORMES.

Sharpe, Classif. Bds. p. 78 (1891); Sharpe, Hand-List Bds. i. p. 240 (1899).

Family CATHARTIDÆ.

Sharpe, t. c. p. 240 (1899).

Genus VULTUR.

<i>Vultur</i> Linnæus, Syst. Nat. Ed. X. p. 86, (1758) . . .	Type.	<i>V. gryphus</i> .
<i>Sarcoramphus</i> , Sharpe, Cat. Bds. Brit. Mus. i. p. 20 (1874);		
Sharpe, Hand-list Bds. i. p. 240 (1899) (nec Duméril).		

Gryphus, Bonap. Rev. et Mag. de Zool. 1854, p. 530 . . . *V. gryphus*.

Geographical Range.—South America; on the western coast from Ecuador and Colombia southward to the Straits of Magellan, and on the east coast north to about latitude 41° south.

VULTUR GRYPHUS Linnæus.

Vultur gryphus, Linn. Syst. Nat. i. p. 86 (1758).

Le Condor, Briss. Orn. I. p. 473 (1760).

Vultur magellicanus, Shaw, Mus. Lever. p. 1, pl. 1 (1792).

Iriburubichá, Azara, Apunt. I. p. 15 (1802).

Gypagus gryffus, Vieill. N. Dict. d'Hist. Nat. xxxvi, p. 450 (1819).

Cathartes gryphus, Tenam. Pl. Col. I. pls. 133, 408, 494 (1823); Schl. Mus. Pas Bas, Vultures, p. 1 (1862).

Sarcoramphus condor, Less. Traité d'Orn. p. 25 (1831); Des Murs in Gay's Hist. Chil. Zool. I. p. 194, pl. i (1847); Phil. & Landb. Cat. Av. Chil. p. 2 (1868).

Sarcoramphus gryphus, D'Orb. Voy. Amer. Mérid. p. 17 (1835); Fraser, P. Z. S. 1843, p. 108 (Chilian Andes, abundant); Pelz. Reise Novara, Vög. p. 3 (1865: Chili).

Sarcorhamphus gryphus, Darw. Voy. Beagle, Birds, p. 1 (1841: Rio Negro [Lat. 41°]: Port Desire; Santa Cruz); Bibra, Denkschr. Ak. Wien (2) V. p. 128 (1853); Hartl. Naum. 1853, p. 220 (Chili); Cass. U. S. Astr. Exped. p. 172 (1855); id. U. S. Expl. Exped. Aves, p. 69 (1858: Valparaiso, April: Callao, May); Burm. La Plata Reis. II. p. 433 (1861: Sierras of Cordova); Scl. & Salv. Nomencl. Av. Neotr. p. 123 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 20 (1874); Durnf. Ibis, 1877, pp. 29, 40 (Ninfas Point, Chupat Valley, Nov.); id. Ibis, 1878, p. 398 (Valley of the Sengel, Nov. breeding); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Phil. Ornith., IV. p. 220 (1886: Trespuntas); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Patagonia from the Atlantic to the Cordilleras); Scl. & Huds. Argent. Orn. II. p. 90 (1889: Rio Negro); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 248, 324 (1891: Santa Cruz; Orange Bay: Rio Gallegos); James, New List Chil. B. p. 9 (1892); p. 115 (Córdoba); Frenzel, J. f. O. 1891, Lane Ibis, 1897, p. 184 (Tarapacá); Schalow, Zool. Jahrb. Suppl. IV. p. 690 (1898: Punta Teatina, Dec.); Gosse in Fitzgerald's

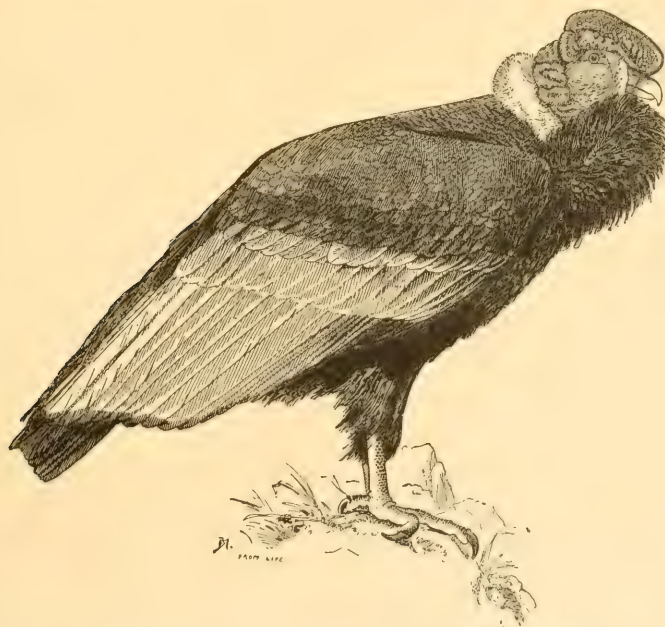
Highest Andes, App. C. p. 342 (1899: Mendoza; Punta de las Vacas; Lujan, winter); Sharpe, Hand-list B. i. p. 240 (1899); Carbajal, La Patagonia, Part II, p. 259 (1900); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: South Patagonia).

Sarcoramphus papa, Hartl. (nec Linn.) Ind. Azara, p. 1 (1847); Cunningh. Nat. Hist. Hartl. Str. Magell. pp. 114, 303 (1871).

Gryphus cunctur, Bonap. Rev. et Mag. de Zool. 1854, p. 530.

Sarcorhamphus magellanicus, Sharpe, Cat. B. Brit. Mus. i. p. 20, note (1874); Gurney, Ibis, 1875, p. 91: id. List. Diurn. B. Prey, p. 2 (1884).

FIG. 262.



Vultur gryphus. Adult male. Drawn from a live bird in the collection at Central Park, New York. About one-eighth natural size.

GENERAL DESCRIPTION:

Size.—Adult male, P. U. O. C. 6707. Cape Fairweather, Patagonia; 11 July, 1896; J. B. Hatcher.

Total length, about 39.00 inches.

Wing, 29.00 inches.

Culmen, 2.8 inches.

Tail, 14.5 inches.

Tarsus, 4.7 inches.

FIG. 263.



Vultur gryphus. Adult male. In repose. Drawn from a live bird in the collection at Central Park, New York. About two-thirds natural size.

Color.—(Male cited above.)

General color: Glossy black, with much silvery frosted white on the wings and a pure white ruff about the neck.

FIG. 264.



Vultur gryphus. Adult male. Alert. Drawn from a live bird in the collection at Central Park, New York. About two thirds natural size.

Head: No feathering; the bare head is decorated with a wattle and there is a large caruncle extending from the latter part of the culmen to the back of the head. The wattles vary much in color and appearance, when the bird is in repose or when very active; lavender to bluish pink are the prevailing shades when the bird is quiet; these colors are intensified and the pink and red shades become vivid when the bird is excited.

Neck: The bare skin of the neck is crinkled and terminates abruptly in the snow-white, downy ruff around the lower neck. There is a pendant wattle immediately below this ruff, at the base of the neck where it joins the chest.

Back: Glossy dead black throughout, including rump and upper tail-coverts.

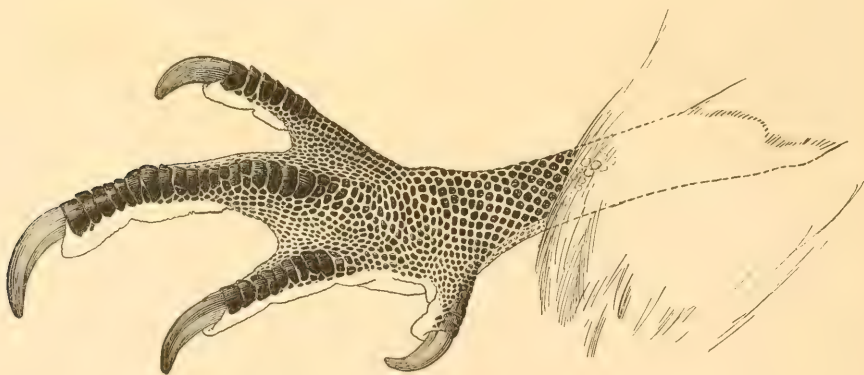
Tail: Glossy dead black.

Wings: Scapulars and lesser wing-coverts like the back; outer primaries glossy black; inner primaries and all the secondaries margined deeply on all the exposed upper surfaces with ash-white, having a frosted appearance; the tips of the secondaries are glossy black, forming a terminal bar of that color, when the wing is closed; the wing as a whole has the shoulders black and the rest of the wing ash-white, when closed; when expanded, it is black, white and black; under wing-coverts and axillaries shining deep black.

Lower parts: Glossy dead black.

Bill: "Brownish at the base, shading into clear white at terminal half and tip." (J. B. Hatcher.)

FIG. 265.



Vultur gryphus. Foot and leg; one-half natural size. P. U. O. C. 7983.

Feet: "Black, powdered with grey." (J. B. Hatcher.)

Iris: "51. ♀?; Rio Gallegos, 3 June, 1896, grey; fine plumage. 72. ♀. Cape Fairweather, 6 July, 1896, eye fiery red. 85. ♂. Cape Fairweather, 16 July, 1896, eye between brown and orange (pupil black). 86. ♂. Same as last or probably a shade lighter. 105. ♂. Eye orange color." The above colors for the iris are taken from Mr. Hatcher's field note book.

FIG. 266.



Vultur gryphus. Adult female. P. U. O. C. 7983. About two-thirds natural size.

The adult female is like the adult male in body color, but lacks the wattles and caruncle of that sex and is generally a little smaller. The bare skin of the head and neck is covered with sparse brownish down and the sides of the face have a scattered cover of black hairs.

Immature males are like the females, except that the ash-white of the wings is not attained until the second or possibly the third year; they have at this period a nasal caruncle but no wattles, the head except for the caruncle being like that of the female.

FIG. 267.

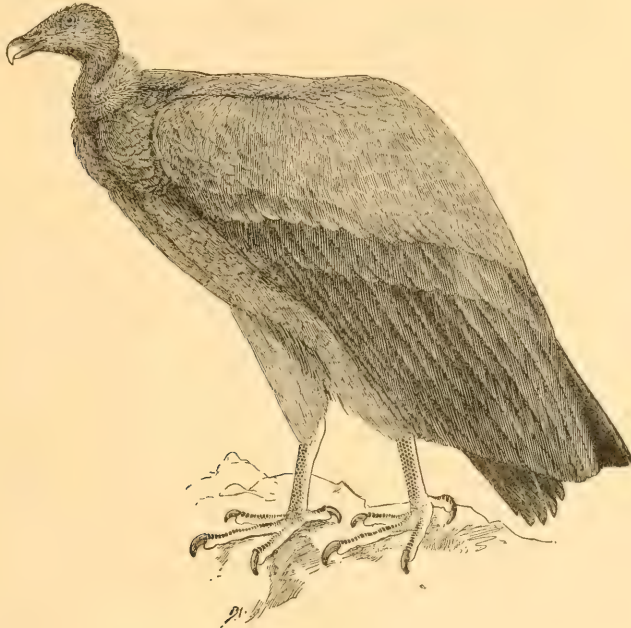


Vultur gryphus. Immature male. Drawn from a live bird in the collection at Central Park, New York. About one-third natural size.

Young birds of the first year are dull brownish black all over and have the head much as in the adult female; the brownish shade is pronounced, there being no tinge of black, but sometimes the ash-white part of the wing

of the adult is indicated by a paler shade of brown. Primaries and tail feathers dull brownish. In this plumage the neck is covered with a thick dark brown down and the head is not so bare as in the old birds; the ruff on the neck is deep lead color and is not so well defined as is the white ruff of later life.

FIG. 268.



Vultur gryphus. Immature female. P. U. O. C. 7984. About one-eighth natural size.

Geographical Range.—Andes and cliffs of the coasts of western South America north to Peru; the cliffs of the Straits of Magellan and the Atlantic Coast north to the mouth of the Rio Negro (Darwin). Not frequent in the interior of Patagonia away from broken, hilly or mountain country. (Hatcher.)

The fine series of these birds brought by Mr. Hatcher from Patagonia, together with live birds in the Zoölogical Gardens in London and New York have formed the basis of the foregoing descriptions. Appended are the accounts of some of the best observers as to the behavior and general life history of the Condor.

Darwin in the "Voyage of the Beagle" (pp. 3-6) says: "The Condor is known to have a wide range, being found on the west coast of South America, from the Straits of Magellan, throughout the range of the Cordillera, as far, according to M. D'Orbigny, as 8° north latitude. On the Patagonian shore, the steep cliff near the mouth of the Rio Negro, in latitude 41° , was the most northern point where I saw these birds, or heard of their existence; and they have wandered about four hundred miles from the great central line of their habitation in the Andes. Further south, among the bold precipices which form the head of Port Desire, they are not uncommon; yet only a few stragglers occasionally visit the sea coast. A line of cliff near the mouth of the Santa Cruz is frequented by these birds, and about eighty miles up the river, where the sides of the valley were formed by steep basaltic precipices, the Condor again appeared, although in the intermediate space not one had been seen. From these and similar facts, I believe the presence of the birds is chiefly determined by the occurrence of perpendicular cliffs. In Patagonia, the Condors, either by pairs or many together, both sleep and breed on the same overhanging ledges. In Chile, however, during the greater part of the year, they haunt the lower country, near the shores of the Pacific, and at night several roost in one tree; but in the early part of the summer they retire to the most inaccessible parts of the Cordillera, there to breed in peace.

"With respect to their propagation, I was told by the country people in Chile, that the Condor makes no sort of nest, but in the months of November and December, lays two white eggs on a shelf of bare rock. Certainly, on the Patagonian coast, I could not see any sort of nest among the cliffs, where the young ones were standing. I was told that young condors could not fly for a whole year, but this probably was a mistake, since M. D'Orbigny says they take to wing in about a month and a half after being hatched. On the fifth of March (corresponding to our September), I saw a young bird at Concepcion, which, though in size only a little inferior to a full-grown one, was completely covered by down, like that of a gosling, but of a blackish color. I can, however, scarcely believe that this bird could have used, for some months subsequently, its wings for flight. After the period when the young Condor can fly, apparently as well as the old birds, they yet remain (as I observed in Patagonia) both roosting at night on the same ledge, and hunting by day with their parents; but before the young bird has the ruff round the neck white, it

may often be seen hunting by itself. At the mouth of the Santa Cruz, during part of April and May, a pair of old birds might be seen every day, either perched on a certain ledge, or sailing about in company with a single young one, which latter, though full fledged, had not its white ruff.

"The Condors generally live by pairs; but among the basaltic cliffs of the plains, high up the river Santa Cruz, I found a spot where scores must usually haunt. They were not shy; and on coming suddenly to the brow of the precipice, it was a fine sight to see some twenty or thirty of these great birds start heavily from their resting place, and wheel away in majestic circles. From the large quantity of dung on the rocks, they must have long frequented this cliff; and probably they both roost and breed there. Having gorged themselves with carrion on the plains below, they retire to these favorite ledges to digest their food in quietness. From these facts, the Condor must, to a certain degree be considered, like the Gallinazo (*Cathartes atratus*), a gregarious bird. In this part of the country they live almost entirely on guanacoës, which have either died a natural death, or, as more commonly happens, have been killed by the pumas. I believe, from what I saw in Patagonia, that they do not, on ordinary occasions, extend their daily excursions to any great distance from their regular sleeping places.

"The Condors may often be seen at great height, soaring over a certain spot in the most graceful spires and circles. On some occasions I am sure they do this for their sport; but on others, the Chileno countryman tells you, that they are watching a dying animal, or the puma devouring its prey. If the Condors glide down, and then suddenly all rise together, the Chileno knows it is the puma, which, watching the carcass, has sprung out to drive away the robbers. Besides feeding on carrion, the Condors frequently attack young goats and lambs. Hence the shepherds train their dogs the moment the enemy passes over, to run out, and looking upwards, to bark violently. The Chilenos destroy and catch numbers; two methods are used; one is to place a carcass within an enclosure of sticks on a level piece of ground, and when the Condors have gorged themselves to gallop on horseback to the entrance, and thus enclose them; for when this bird has not space to run, it cannot give its body sufficient momentum to rise from the ground. The second method is to mark the trees in which, frequently to the number of five or six, they roost together, and then at night to climb up and noose them; they are

such heavy sleepers, as I have myself witnessed, that it is not a difficult task. At Valparaiso I have seen a living Condor sold for sixpence, but the common price is eight or ten shillings. One which I saw brought in for sale, had been lashed with a rope, and was much injured; but the moment the line was cut by which its bill was secured, it began, although surrounded by people, ravenously to tear a piece of carrion. In a garden at the same place, between twenty and thirty of these birds were kept alive; they were fed only once a week, yet they appeared to be in pretty good health. The Chileno countrymen assert, that the Condor will live and retain its powers between five and six weeks without eating; I cannot answer for the truth of this fact, but it is a cruel experiment, which very likely has been tried.

"When an animal is killed in this country, it is well known that the Condors, like other carrion vultures, gain the intelligence and congregate in a manner which often appears inexplicable. In most cases, it must not be overlooked, that the birds have discovered their prey, and have picked the skeleton clean, before the flesh is in the least degree tainted. Remembering the opinion of M. Audubon on the deficient smelling powers of such birds, I tried in the above mentioned garden, the following experiment. The Condors were tied, each by a rope, in a long row at the bottom of a wall. Having folded a piece of meat in white paper, I walked backwards and forwards, carrying it in my hand at the distance of about three yards from them; but no notice was taken of it. I then threw it on the ground within one yard of an old cock bird; he looked at it for a moment with attention, but then regarded it no more. With a stick I pushed it closer and closer, until at last he touched it with his beak; the paper was then instantly torn off with fury, and at the same moment every bird in the long row began struggling and flapping its wings. Under the same circumstances, it would have been quite impossible to have deceived a dog."

The following is from Mr. Hatcher's Narrative of the Expedition, pp. 61-65: "The country for some two or three miles to the northward of Cape Fairweather consists of rounded hills separated by shallow depressions, while a loose, warm, sandy soil takes the place of the shingle of the plains and supports a considerable growth of grass and calafate bushes. It is a favorite retreat for the guanaco and rhea, as well as many other mammals and birds.

"If I had lost my first guanacos, killed in Patagonia, I had at any rate gained at first hand some very useful knowledge concerning the habits of the carranchas, those scavengers of this part of the southern hemisphere; and since the carcasses were no longer of value as natural history specimens, I resolved to see what more of interest they would be the means of teaching me concerning the habits of these or other birds or mammals. Repairing to a thicket of calafate bushes that grew on the margin of the bed of shingle, where I could watch without attracting attention, I took a comfortable position in order to observe the drama which was being enacted on this bed of shingle, in the first act of which I had been one of the principal participants, though now reduced to the rank of a spectator. What an animated scene was transferred suddenly as if by magic to this spot, which under ordinary circumstances is quite destitute of either animal or vegetable life. Carranchas gathered about in great numbers, while several white and grey gulls also appeared upon the scene. Many a spirited contest was waged between the various aspirants for the more desirable portions. Suddenly there was on all sides a scurrying, as these birds literally tumbled over one another in their haste to get away, and looking up I saw a male condor come sailing down. His powerful wings were fully extended, giving a total expanse of not less than nine feet. The long primaries were motionless, seemed separated from one another by an interval of about an inch, and were so distinct that I could without difficulty have counted the series as he soared by. The pure white of his shoulders and the delicate ruff was intensified by the deep black of the back and under-body, while the iridescence of the neck and comb were faintly distinguishable. He sailed straight as an arrow to the nearest carcass of the two guanacos, and on reaching a point directly over and a few feet above the dead animal, the limbs were dropped suddenly downward to their full length, there was a slight quivering motion, better described perhaps as tremor of the wings, and the great bird settled slowly downwards until the feet came in contact with the carcass, when the wings were stretched slowly to their greatest expanse and then carefully and slowly closed upon the sides. After alighting in this somewhat deliberate manner, a moment was given to a survey of the immediate surroundings, either for the purpose of detecting an enemy, or perhaps to confer most gracious recognition upon those other members of the feathered tribe who had at his approach by common accord moved off and now stood

at a respectful distance, patiently awaiting the pleasure of this monarch of the air as he occupied not only the head, but all of the table at this most bounteous feast. This survey completed, and having apparently convinced himself that all was plain sailing, he strode quietly up and down the body of the animal once or twice, as though to select the most advantageous position, then coming to a standstill with the legs far apart and one foot firmly planted on the hip and the other on the side, he commenced a most vigorous, even furious attack upon the carcass, using his great sharp and hooked beak as a weapon. Almost instantly a hole was made through the flank and into the abdominal cavity, where at each stroke with the powerful beak considerable sections of the intestines and other organs were torn out and eagerly devoured. . . . During the three years that I spent in Patagonia I had abundant opportunities for observing and noting the manner in which the carranchas and condors attack the fresh carcasses of dead animals, and I always observed it to be similar to that described above. The carranchas always attack the eyes first, then cut out and carry away the tongue by making a hole through the skin at the base of and between the lower jaws, while the condors prefer the abdominal viscera and, in order the more readily to get at these delicacies, they attack the carcass in the region of the flank, where the external abdominal wall is thinnest and protected by very thin skin and a rather scanty covering of hair."

Cunningham says (Natural Hist. Str. Magell., pp. 113-115): "On the return of the surveying party about noon, they reported that two condors had been seen flying about the top of the cliffs, and that one had been fired at and apparently wounded. Accordingly, soon after, I started to look for them, walking along the beach at the base of the cliffs. On coming nearly opposite the place where they had been reported as seen, I was much excited by suddenly coming within sight of no less than eight of these huge birds, half the number of which were perched on a shelf about midway up the cliff, which appeared to be habitually employed as a resting place, as it was whitened with their droppings; while the remaining four were sailing majestically about in the air, their wings widely extended and the pinions separated so as to produce a jagged edge at the tip. Although the gun which I had with me was only loaded with duck-shot, I felt impelled by an irresistible desire to get a shot at them; and accordingly, at the expense of much labor and difficulty, managed to scramble up the

lower part of the cliff by dint of planting my feet in the numerous water-worn gulleys in the hard clay. I had almost attained to within range of those on the shelf, when they slowly flapped their great wings and rose into the air, joining their companions, the whole party now soaring round in a circle above my head, gazing at me with malevolent faces, their whole aspect recalling to me the mythical descriptions of griffins. Although, in common with the rest of the tribe, the condor (*Sarcoramphus Papa*) is disfigured by a naked head, covered with mottled skin, it is truly a magnificent bird when seen in the wild condition and on the wing; and one cannot be surprised that the most exaggerated accounts were given by the older travelers of the dimensions to which it attains—as much as eighteen feet having been sometimes assigned to the expanse of the wing. It is widely distributed over the western side of the South American continent, the Cordillera appearing to constitute its headquarters. On the eastern side, on the other hand, it has a much more limited range—a steep cliff near the mouth of the Rio Negro, according to Mr. Darwin, being its northern limit on the Patagonian coast. He mentions Port Desire and the mouth of the Santa Cruz River, on the same coast, as localities where it is met with further south; and we noticed it both at Port Gallegos and in several localities in the eastern part of the Strait of Magellan, almost invariably in the neighborhood of steep cliffs.”

Hudson's "Idle Days in Patagonia" has the following (pp. 56-57): "A slight adventure I had with a condor, the only bird of that species I met with in Patagonia, will give some idea of the height of this sheer wall of rock. I was riding with a friend along the cliff when the majestic bird appeared, and swooping downwards hovered at a height of forty feet above our heads. My companion raised his gun and fired, and we heard the shot rattle loudly on the stiff quills of the broad motionless wings. There is no doubt that some of the shot entered its flesh, as it quickly swept down over the edge of the cliff and disappeared from our sight. We got off our horses, and crawling to the edge of the dreadful cliff looked down, but could see nothing of the bird. Remounting we rode on for a little over a mile, until coming to the end of the cliff we went down under it and galloped back over the narrow strip of beach which appears at low tide. Arrived at the spot where the bird had been lost we caught sight of it once more, perched at the mouth of a small cavity in the face of the rocky wall near the summit, and looking at that height no bigger than a

buzzard. He was far beyond the reach of shot, and safe, and if not fatally wounded, may soar above that desolate coast, and fight with vultures and grey eagles over the carcasses of stranded fishes and seals for half a century to come."

Genus CORAGYPS Is. Geoff.

Type.

Coragyps "Isid. Geoff. St. Hilaire," Le Maout, Hist. Nat.

Ois. (1853), p. 66; Bp. Rev. et Mag. de Zool. 1854, p. 530. *C. urubu*.
Catharista, Sharpe, Cat. Bds. Brit. Mus. i. p. 23 (1874);

Sharpe, Hand-list Bds. i. p. 240 (1899) (nec Vieill.). . . *C. urubu*.
Cathartes, Gray, Gen. of B. i. p. 4 (1844, nec Illig.). . . *C. urubu*.

Geographical Range.—South America to 40° south latitude; the whole of Central America; the lower altitudes of Mexico on the eastern coast and into the United States as far north as North Carolina; not recorded from the western coast of Mexico or California.

CORAGYPS URUBU (Vieill).

Vautour du Brésil, D'Aubent. Pl. Enl. I. pl. 187 (1770).

Vultur atratus, Bartr. Trav. Carol. p. 289 (1791).

Vultur atratus, Bartram, Meyer, Zoolog. Annalen 1793, p. 290 (1794);

Iribú, Azara, Apunt. I. p. 19 (1802).

Vultur urubu, Vieill. Ois. l'Amer. Sept. pl. 2 (1807).

Cathartes fœtans, Licht. Verz. Doubl. p. 63 (1823): Hartl. Ind. Azara, p. 1 (1847); Burm. La Plata Reis. II. p. 433 (1861: Mendoza; Tucuman); Pelz Reis. Novara, Vög. p. 3 (1865: Santiago, Chili).

Cathartes urubu, Less. Voy. Coq. Zool. p. 614 (1826); id. Traité d'Orn. p. 27 (1831); d'Orb. Voy. Amer. Mérid. p. 31, pl. 1, figs. 1 [2 egg] 1835; Des Murs in Gay's Hist. Chil. Zool. I. p. 200 (1847); Phil. & Landb. Cat. Av. Chil. p. 2 (1868).

Cathartes atratus, Gould, Voy. Beagle, Birds, p. 7 (1841: Rio Negro and Rio Colorado, Patagonia); Fraser, P. Z. S. 1843, p. 108 (Mendoza & Chili); Bibra, Denkschr. AK. Wien. V. p. 128 (1853); Hartl. Naum. 1853, p. 220 (Colchagua); Cass. U. S. Expl. Exped. p. 85 (1858); Cunningh. Nat. Hist. Str. Magell. p. 248 (1871); Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 123 (1873); Doering, Expl. al Rio Negro, Zool. p. 52 (1881: Valley of the Rio

Negro); Darwin, Nat. Voy. Beagle, p. 58 (1882: Patagonia); Barrows, Auk. I. p. 113 (1884: Carhué, April); Scl. & Huds. Argent. Orn. II. p. 89 (1889: Rio Negro); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo, very abundant); James, New List Chil. B. p. 7 (1892); Hudson, Idle Days in Patagonia, p. 53 cum fig. (1893); Aplin, Ibis, 1894, p. 196 (Uruguay); Lane, Ibis, 1897, p. 184 (Laraqueti); Carbajal, La Patagonia, Part II. p. 259 (1900).

FIG. 269.



Coragyps urubu. P. U. O. C. 5249. Adult male. Greatly reduced.

Cathartes brasiliensis, Cass. U. S. Expl. Exped. p. 86 (1858).

Cathartes atratus brasiliensis, Schl. Mus. Pays Bas. Vultures, p. 3 (1862: Patagonia).

Catharista atrata, Baird, Brewer & Ridgw. N. Amer. B. III. p. 351 (1874); Gurney, List Diurn. B. Prey, p. 5 (1884).

Catharistes atratus, Sharpe, Cat. B. Brit. Mus. I. p. 24 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Northern Patagonia); Grenzel, J. f. O. 1891, p. 115 (Córdoba); Schalow, Zool. Jahrb. Suppl. IV. p. 691 (1898: Calbuco; Coquimbo).

Catharistes urubu, Sharpe, Hand-list B. I. p. 240 (1899.)

GENERAL DESCRIPTION:

Size.—Adult male, 5249 P. U. O. C., Panasofkee Lake, Florida, 27th January, 1876. William E. D. Scott.

Total length, about 26.5 inches.

Wing, 17.0 inches.

Culmen, 2.8 inches.

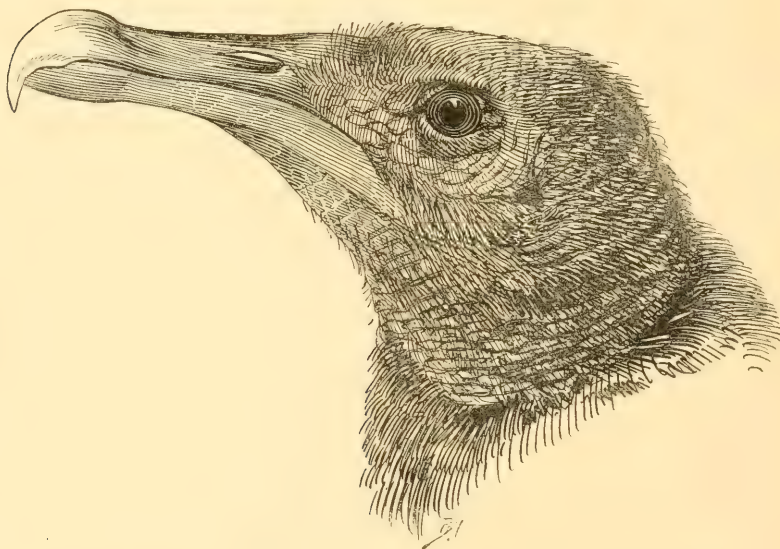
Tail, 8.3 inches.

Tarsus, 3.2 inches.

Color.—(Male cited above.)

General color: Dull uniform black; the head naked, black with scattered short black hairs.

FIG. 270.



Coragyps urubu. Adult male. P. U. O. C. 5249. Profile of head; life size.

Head: Naked; dull blackish lead-color; covered with sparse, dark hairs, thickest on the occiput.

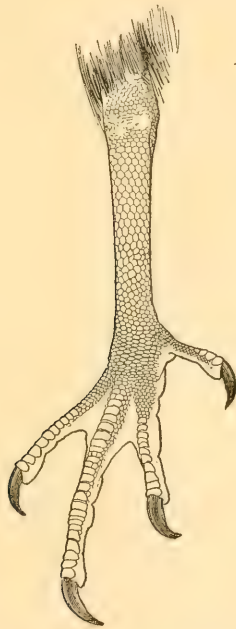
Neck: The throat and upper neck like the head; the feathers, dull black in color, cover the lower neck and reach on the upper neck nearly to the back of the head.

Back: Back, rump and upper tail-coverts dull uniform black.

Tail: Square in shape; a very marked character always conspicuous. Dull black above; somewhat paler from below; shafts of rectrices black above and white almost to the tips below.

Wings: Primaries dull black, the shafts white both above and below, and the under surfaces hoary or white; the rest of the feathers of the wing dull uniform black.

FIG. 271.



Coragyps urubu. P. U. O. C. 5249. Detail of foot; one-half life size.

Lower parts: Dull uniform black throughout.

Bill: Dusky; the tip yellowish or white.

Feet: Dull blackish lead-color.

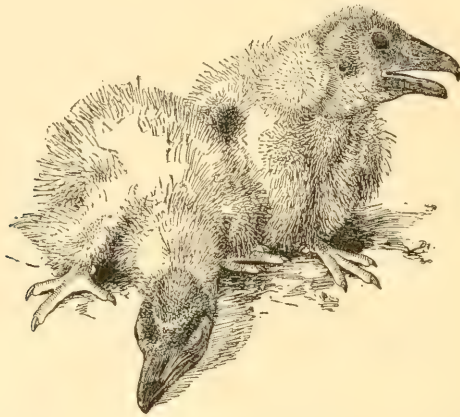
Iris: Deep hazel-brown.

The adult female is like the male in appearance, averaging a little smaller in size.

Immature birds and young of the year fully feathered do not differ mark-

edly from adults in general appearance, but there is a greater or less admixture or shading of dull brown in the plumage, not to be found in the adults.

FIG. 272.



Coragyps urubu. Young soon after hatching. One-half natural size.

Downy young are tawny buff color, darker on the head, which is downy on top, but still shows the bare part, that is to be, clearly defined through the down; the skin is dark-colored; the eyes hazel-brown; feet bluish lead-color; bill dull lead-color. These birds are very young, the egg tooth on the bill not being as yet absorbed or worn off.

Geographical Range.—South America to 40° S. latitude; the Rio Negro region of Patagonia; the whole of Central America; Mexico and North America to nearly the fortieth parallel on the eastern coast and the Mississippi Valley; not yet recorded from western Mexico or California.

Mr. Hatcher did not explore that portion of Patagonia where this vulture occurs, and the North American examples in the Princeton Museum, of which there are many in all phases of plumage, have formed a basis for the foregoing descriptions. Darwin and other noted travelers and naturalists have left to us their impressions of these birds as they occur in Patagonia and Chili and some of their observations are given below.

The birds nest on the ground in secluded places in the woods in undergrowth preferably, and sometimes close to fallen timber. In Florida I have found them nesting in dense thickets of scrub palmetto in February

and March; there is no attempt at nest building, only a hollow worn by the birds turning in the sandy ground, and two eggs are the usual number laid.

"These birds," says Darwin (Voy. Beagle, Birds, pp. 7-8), "I believe are never found further south than the neighborhood of the Rio Negro, in latitude 41° ; I never saw one in southern Patagonia, or in Tierra del Fuego. They appear to prefer damp places, especially the vicinity of rivers; and thus, although abundant at the Rio Negro and Colorado, they are not found on the intermediate plains. Azara states that there existed a tradition in his time, that on the first arrival of the Spaniards in the Plata, these birds were not found in the neighborhood of Monte Video, but that they subsequently followed the inhabitants from more northern districts. M. Al. D'Orbigny, in reference to this statement, observes that these vultures, although common on the northern bank of the Plata, and likewise on the rivers south of it, are not found in the neighborhood of Buenos Ayres, where the immense slaughtering establishments are attended by infinite numbers of Polybori and gulls. M. D'Orbigny supposes that their absence is owing to the scarcity of trees and bushes in the Pampas; but this view, I think, will hardly hold good, inasmuch as the country near Bahia Blanca, where the Gallinazo (together with the carrion-feeding gull) is common, is as bare, if not more so, than the plains near Buenos Ayres. I have never seen the Gallinazo in Chile; and Molina, who was aware of the difference between the *C. atratus* and *C. aura*, has not noticed it; yet, on the opposite side of the Cordillera, near Mendoza, it is common. They do not occur in Chiloe, or on the west coast of the continent south of that island. In Wilson's Ornithology it is said that 'the carrion crow (as this bird is called in the United States) is seldom found on the Atlantic to the northward of Newbern, lat. 35° North Carolina.' But in Richardson's "Fauna Boreali-Americana," it is mentioned, on the authority of Mr. David Douglas, that on the Pacific side of the continent it is common on the marshy islands of the Columbia,¹ and in the neighborhood of Lewis's and Clark's rivers (45° - 47° N.) It has, therefore, a wider range in the northern than in the southern half of the continent. These vultures certainly are gregarious; for they seem to have pleasure in each other's society, and are not solely brought together by the attraction of a common

¹ This record is unsubstantiated by subsequent study of the region here alluded to, and the black vulture, as has before been stated, has yet to be recorded from the Pacific coasts of Mexico and the United States.—*W. E. D. Scott.*

prey. On a fine day a flock may often be seen at a great height; each bird wheeling round and round in the most graceful evolutions. This is evidently done for sport; or, perhaps is connected (for a similar habit may sometimes be observed during the breeding season amongst our common rooks) with their matrimonial alliances."

Hudson in "Idle Days in Patagonia" (pp. 52-53) alludes to the species as follows: "The weather was the worst I had experienced in the country, being piercingly cold, with a violent wind and frequent storms of rain and sleet. The rough, wet boles of the trees rose up tall and straight like black pillars from the rank herbage beneath, and on the higher branches innumerable black vultures (*Cathartes atratus*) were perched, waiting all the dreary day long for fair weather to fly abroad in search of food.

"On the ground this vulture does not appear to advantage, especially when bobbing and jumping about, performing the 'buzzard lope,' when quarreling with his fellows over a carcass; but when perched aloft, his small naked rugous head and neck and horny curved beak seen well-defined above the broad black surface of the folded wing, he does not show badly. As I had no wish to make a bag of vultures and saw nothing else, I shot nothing."

Genus CATHARTES Illiger.

Type.

Cathartes, Illiger, Prodr. Syst. Mamm. et Av. p. 236 (1811);

Sharpe, Hand-list Bds. i. p. 240 (1899). *C. aura*.

Catharista Vieill, Analyse, p. 21 (1816 nec auct. recent . . . *C. aura*.

Rhinogryphus, Ridgw. Baird, Brewer, and Ridgway, Bds. of N.

A. iii. p. 337 (1874) *C. aura*.

Cenops, Sharpe, Cat. Bds. Brit. Mus. i. p. 22 (1874) *C. aura*.

Geographical Range.—The whole of South America; the Falkland Islands; Central America; North America north to southern New England, on the Eastern Coast, in the interior to the Saskatchewan and on the Pacific Coast to British Columbia.

CATHARTES AURA (Linnaeus).

The Turkey Buzzard, Catesby, Nat. Hist. Carol. I. p. 6, pl. 6 (1730).

Vultur aura, Linn. Syst. Nat. I. p. 86 (1758); Vieill. Ois. l'Amér. Sept. pl. 2 bis (1807); Darw. Nat. Voy. Beagle, p. 58 (1882).

Vultur iota, Molina, Sagg. St. Nat. Chil. p. 321 (1789).

Acabiráy, Azara, Apunt. I p. 24 (1802).

Catharista aura, Vieill. Analyse, p. 22 (1816); id. Gal. Ois. I. p. 16, pl. 4 (1825).

FIG. 273.



Cathartes aura. Adult male. About one-sixth natural size.

Cathartes aura, D'Orb. Voy. Amer. Mérid. p. 38, pl. 1, figs. 3 [4 egg] (1835); Darw. Voy. Beagle, Birds, p. 8 (1841: Tierra del Fuego; West Patagonia); Hartl. Ind. Azara, p. 1 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 202 (1847); Burm. La Plata Reis. II. p. 433 (1861: Mendoza; Catamarca; Tucuman); Pelz. Reis. Novara, Vög. p. 3 (1865: Chili); Phil. & Landb. Cat. Av. Chil. p. 2 (1858); Scl. & Salv. Ibis, 1869, p. 284 (Hasleyn Cove, Messier Channel, May);

- Cunningh. Nat. Hist. Str. Magell. p. 355 (1871); Scl. & Salv. Nomencl. p. 123 (1873); White, P. Z. S. 1882, p. 624 (Concepcion, Misiones, June, abundant); Scl. & Huds. Argent. Orn. II. p. 89 (1889: Patagonia, not common); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 6, 324 (1891); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo, very abundant); James, New List Chil. B. p. 9 (1892); Lataste, Actes Soc. Scient. Chil. III. p. cxv (1893: Cordilleras); Lane, Ibis, 1897, p. 184 (Corral); Schalow, Zool. Jahrb. Suppl. IV. p. 691 (1898: Iquique, May); Sharpe, Hand-list B. I. 240 (1899); Carbajal, La Patagonia, Part ii, p. 259 (1900).
- Cathartes iota*, Fraser, P. Z. S. 1843, p. 108 (Chili, common along the coast).
- Cathartes jota*, Hartl. Naum. 1853, p. 220; Cass. U. S. Expl. Exped. p. 73 (1858: Callao).
- Rhinogryphus aura*, Baird, Brewer & Ridgw. N. Amer. B. III. p. 344 (1874); Sharpe, Cat. B. Brit. Mus. I. p. 455 (1874); id. Journ. Linn. Soc. Zool. xiii, p. 21 (1876); id. P. Z. S. 1881, p. 9 (Tom Bay, April); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Gurney, List Diurn. B. Prey. p. 4 (1884).
- Cenops aura*, Sharpe, Cat. B. Brit. Mus. I. p. 25 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Patagonia; Tierra del Fuego); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: South Patagonia).
- Catharistes aura*, Frenzel, J. f. O. 1891, p. 115 (Córdoba).

GENERAL DESCRIPTION:

Size.—Adult male, 4827, P. U. O. C.

Total length, about 31.00 inches.

Wing, 22.00 inches.

Culmen, 2.5 inches.

Tail, 11.5 inches.

Tarsus, 2.8 inches.

Color.—(Male cited above.)

General color: Black with a gloss of bluish purple. Head and upper neck naked.

Head: Naked; slightly wrinkled; bright red in the live bird.

Neck: The back of the head often with a scattered down of hair and the

lores and top of the head are sometimes decorated with wart-like papillæ, pearly white in color. Upper neck naked and colored like the head; lower neck feathered all around, black, with bluish shade.

Back: Back, rump and upper tail-coverts, black, with purplish blue shade.

Tail: Black, with a bluish shade, seen from above; from below, more or less ashy grey; shafts brown from above; yellow-white from beneath.

Wings: Black, with purple-blue gloss; the primaries dull brownish black, with shafts deep brown above and yellow-white from beneath. The secondaries paler than the primaries and not glossed or with any reflections; the edges of the secondaries, scapulars and wing-coverts with margins of light ashy brown; this margin is not abrupt and varies much in width and tone in different individuals. The primaries are ashy, when seen from beneath; the lower wing-coverts and axillaries black.

Lower parts: Uniform dull black, darker than above, with a bare crop patch on the upper chest.

Bill: Varies from pale yellowish white, with a pure white tip, to pure chalky white.

Feet: Legs and feet pale yellowish brown.

Iris: Deep hazel-brown.

The sexes do not differ in appearance.

Immature birds are similar to the adults, but the general color is brownish black, the bare skin of the head and neck livid dusky, the bill deep horn-brown and the feet and legs of a light shade.

Downy young are nearly pure white; the head is naked, as is the upper neck, and dusky leadish in color.

Geographical Range.—North America, breeding only in the southern part of its range, but migrating more or less regularly north to New England and New York on the Atlantic side; in the interior migrating to Saskatchewan, and on the Pacific side to British Columbia, about 49° north. The whole of Mexico, Central America and the West Indies; South America south to Patagonia and Chili; not reaching far into either territory; the Rio Negro region of Patagonia.

With some hesitation we have defined the southern range of the Turkey Buzzard; but if we consider this bird specifically distinct from the form generally found in Chili, in Patagonia, at the Straits of Magellan, in Tierra del Fuego and the Falkland Islands, the above account of the distribution of *C. aura* in its southern range must be accepted. While the

differences between the two species seem constant, it appears that *C. falklandicus* is not more divergent from the rest of the Turkey Buzzard stock of North and South America than are the many geographical races distinguishing forms of birds that have a wide geographic distribution. But at the time of the present work not enough light has been shed on this particular problem to warrant any change from the present accepted status of the two birds. Dr. Sharpe believes the two forms to be distinct, while on the other hand Mr. Ridgway does not even accord to the birds from the Straits of Magellan and the Falkland Islands any difference in position, including all under the true *C. aura*.

So much has been written of this vulture that it hardly seems essential to do more than refer to the citations preceding the description; however, a few salient notes are given below. Mr. Barrows writes: "I am not sure that I ever saw *Cathartes aura*, not being familiar with its appearance on the wing, but I find the following in my note-book, under date of March 4, 1880, while camped at the foot of the Sierra de Ventana.

"Several times since camping here I have seen a very large bird which seems to me larger in the body than the common eagle (*G. melanoleucus*) and with a very long tail. They hunt over the mountains as well as over the level ground and rise in spirals nearly as well as *Haliaeetus*. I remember that when attacked by a pair of the latter, which probably had an eyrie among the crags near by, they soon distanced them by rising in spirals; though both species did considerable flapping before the eagles abandoned the pursuit. I thought at the time, and am still inclined to believe, that this bird was *Cathartes aura*." (Barrows, Birds of the Lower Uruguay, Auk, 1, p. 113, foot-note, 1884.)

Hudson does not consider the Turkey Buzzard as a common bird in that part of Patagonia where the whole fauna had been revealed to him by years of study. Mr. Hatcher did not find the bird or record it in the course of his investigations.

Darwin writes: "The turkey buzzard, as it is generally called in English, may be recognized at a great distance from its lofty soaring and most graceful flight. It is generally solitary, or, at most, sweeps over the country in pairs. In Tierra del Fuego, and on the coast of Patagonia, it must live exclusively on what the sea throws up, and on dead seals; wherever these animals in herds were sleeping on the beach, this vulture might be seen, patiently standing on some neighboring rock." (Zool. Voy. Beagle, Birds, p. 8, 1841.)

Dr. Bowdler Sharpe (p. 25, 1881, pp. 9–10) discusses two specimens obtained by Dr. Coppinger. These were:

“Male: Tom Bay, April 11, 1879. Iris dark; eyelids and cere flesh-color; bill horn-color; legs dirty yellow.

“Female: Tom Bay, April 11, 1879. Eyes dark; skin of head and neck light red; legs and feet dirty grey.

“The two specimens sent by Dr. Coppinger would appear, from a comparison of the skins, to be of the same species as the ordinary *Rhinogryphus aura* of North America. I have already determined Chilian specimens in the British Museum as belonging to the last-named species; and, as far as I can now judge from the increased series in that collection, the grey-winged Vultures are confined to the Falkland Islands. I presume that Dr. Coppinger's specimens are a pair, male and female being shot on the same day—the difference in the colour of the soft parts being a very noticeable feature; while I must at the same time admit that the female with her ‘light red’ head has more grey edgings to the wing feathers than the male, and thus shows an approach to *R. falklandicus*.”

CATHARTES FALKLANDICUS (Sharpe).

Cathartes aura, Less. (nec Linn.) Voy. Coq. Zool. I. p. 614 (1826: Falklands); Darw. Voy. Beagle, Birds, p. 8. part (1841: Falkland Islands); Gould, P. Z. S. 1859, p. 93 (egg descr.); Abbott, Ibis, 1860, p. 432 (Falkland Islands); Scl., P. Z. S. 1860, p. 383; Abbott, Ibis, 1861, p. 149 (Falkland Islands, resident, breeds in November); Schl. Mus. Pays Bas, Vultures, p. 3 (1862: Falkland Islands); Scl. & Salv. P. Z. S. 1878, p. 435; iid. Voy. Chall. II. Birds, pp. 105, 150 (1881: Falkland Islands); Oust. Miss. Scient. Cap Horn, Oiseaux, p. 6. part (1891).

Milvago australis, Scl. (nec Gm.), Ibis, 1860, pl. i, fig. 2 (egg) [teste Abbott, t. c. p. 432].

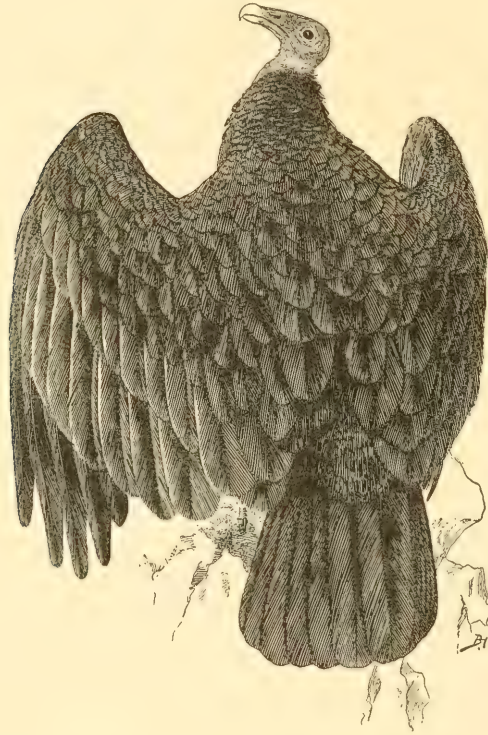
Catharista falklandica, Sharpe, Ann. Nat. Hist. (4) xi, p. 133 (1873).

Cenops falklandicus, Sharpe, Cat. B. Brit. Mus. I. p. 27, pl. ii, fig. 1 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Falkland Islands); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Falkland Islands).

Rhinogryphus falklandicus, Sharpe, Cat. B. Brit. Mus. I. p. 455 (1874); id. P. Z. S. 1881, p. 10; Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Gurney, List Diurn. B. Prey, p. 4 (1884).

Cathartes falklandicus, Sharpe, Hand-list B. I. p. 240 (1899: Falkland Islands; Patagonia; Chili); Salvad. Ann. Mus. Genov. (2) xx, p. 612 (1900: Keppel Isl., Falkland Islands).

FIG. 274.



Cathartes falklandicus, adult male. P. U. O. C. 8998. About one-sixth natural size.

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8998, Chili, March, 1898. Exchange from Museo de La Plata. Orig. No. 2.

Total length, about 29.00 inches.

Wing, 19.0 inches.

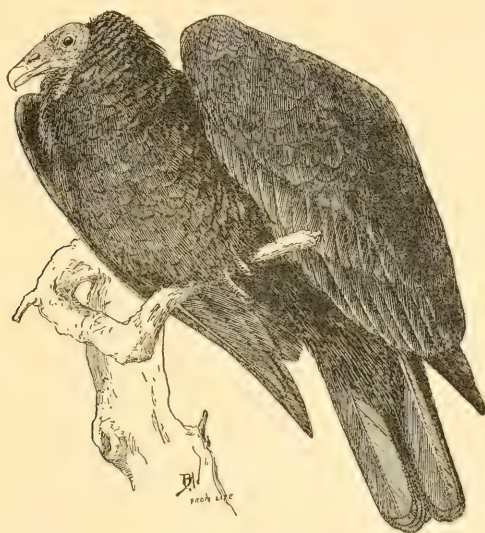
Culmen, 3.0 inches.

Tail, 10.7 inches.

Tarsus, 2.7 inches.

This form averages a little smaller than *C. aura*.

FIG. 275.



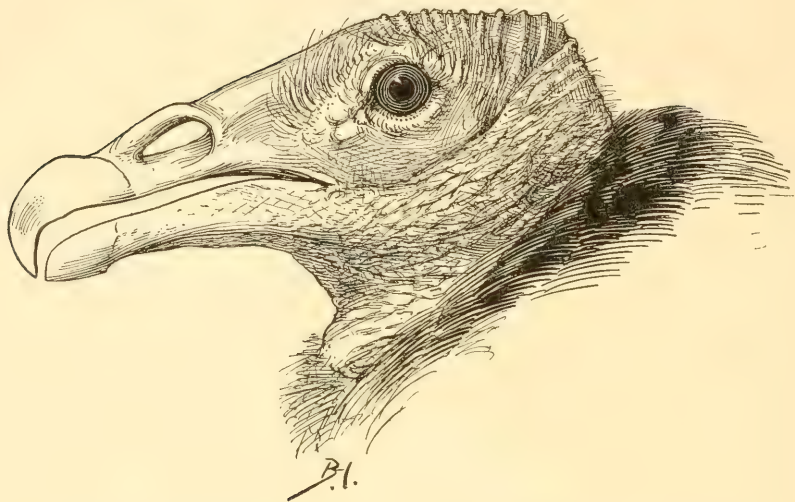
C. falklandicus. P. U. O. C. 8998. Showing lower surface. About one-sixth natural size.

Color.—(Adult male cited above.) Black; averaging darker than in *C. aura*; the gloss blue-green and noticeable particularly on the back, the shoulders, the upper surface of the tail-feathers; the feathers of the back and interscapular region edged with dull brown; the secondaries and median wing-coverts edged with whitish of an ashy tone; this character is very variable and though always present is much more decided in some individuals than in others. Head said to be clear pink in live birds and not bright red as in *C. aura*. Bill yellowish white; the tip pure white. Iris hazel-brown. The under parts are slightly glossed with green-black and the crop patch is bare like that of *C. aura*.

This comparative description will serve to define this form from its close congener.

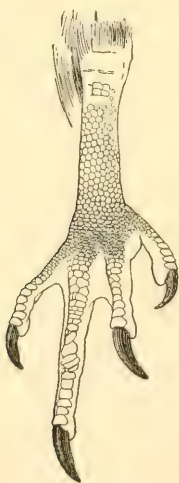
Geographical Range.—Southern Chili and Patagonia; Tierra del Fuego; the Falkland Islands.

FIG. 276.



C. falklandicus, adult male. P. U. O. C. 8998. Details of head. Life size.

FIG. 277.



C. falklandicus. P. U. O. C. 8998. Detail of foot. One-half natural size.

This form of the Turkey Buzzard was not found by the naturalists sent by Princeton to Patagonia; the descriptions are based on two birds, a pair from the Museo de La Plata in exchange. Both birds were taken in Chili in March, 1898, and appear to be typical birds of the kind known as *C. falklandicus*. The gloss on the birds is certainly different in color and more pronounced than in *C. aura*; otherwise the birds are much alike, save for the ashy white on the median coverts and secondaries, which is accentuated more particularly in the female bird.

Order ACCIPITRIFORMES.

Sharpe, Classif. Bds. p. 78 (1891); Sharpe, Hand-list Bds. i. p. 241 (1899).

Family FALCONIDÆ.

Sharpe, Cat. Bds. Brit. Mus. i. p. 30 (1874); Sharpe, Hand-list Bds. i. p. 243 (1899).

Subfamily POLYBORINÆ.

Sharpe, Cat. Bds. Brit. Mus. i. p. 30 (1874); Sharpe, Hand-list Bds. i. p. 243 (1899).

Genus POLYBORUS Vieill.

Type.

Polyborus, Vieill. Analyse, p. 22 (1816); Sharpe, Cat. Bds.

Brit. Mus. i. p. 31 (1874); Sharpe, Hand-list Bds. i. p.

243 (1899) *P. plancus*.

Caracara, Less. Traité, p. 34 (1831) *P. plancus*.

Geographical Range.—South America, south to Cape Horn, Central America and Mexico, reaching into the southern border of the United States.

POLYBORUS PLANCUS (Miller).

Le Busard du Brésil, Briss. Orn. I. p. 405 (1760); Plaintive Eagle, Lath.

Gen. Syn. I. p. 34 (1781: Tierra del Fuego).

Brazilian Kite, Lath. t. c. p. 63 (ex Briss.)

Falco plancus, Miller, Var. Subj. Nat. Hist. pl. 17 (1778: Tierra del Fuego.)

Falco tharus, Molina, Saggio St. Nat. Chil. p. 234 (1782); Gm. Syst. Nat. I. p. 254 (1788).

Falco plancus, Gm. Syst. Nat. I. p. 257 (1788: ex Lath. p. 34).

- Falco brasiliensis*, Gym. t. c. p. 262 (ex Lath. p. 63); King, Zool. Journ. III. p. 423 (1827: Port Famine).
- Vultur plancus*, Lath. Ind. Orn. I. p. 8 (1790); Forst. Descr. Anim. p. 321 (1844: Straits of Magellan).
- Caracara*, Azara, Apunt. I. p. 42 (1802: La Plata).
- Crax caracara*, Lacep. & Dand. Buffon, Hist. Nat. (12^{mo}. Didot), xiv. (Tabl. Ois.) p. 301 (1799).
- Falco cheriway*, Licht. (nec. Jaq.) Verz. Doubl. p. 60 (1823: Montevideo).
- Polyborus brasiliensis*, Vig. Zool. Journ. I. p. 320 (1824); Darw. Voy. Beagle, Birds, p. 9 (1841: Rio Negro & Rio Colorado; Santa Cruz, Patagonia, April); Frazer, P. Z. S. 1843, p. 108 (Chili); Hartl. Ind. Azara, p. 1 (1847); id. Naum. 1853, pp. 208, 220; Pelz. Reis. Novara, Vög. p. 6 (1865: Chili); Darw. Nat. Voy. Beagle, p. 55 (1882: Patagonia).
- Polyborus vulgaris*, Spix, Av. Bras. I. p. 3, pl. 1 (1824); Vieill. Gal. Ois. p. 23, pl. vii. (1825); D'Orb. Voy. Amer. Mérid. p. 55 (1835: Coast of Patagonia); Burm. La Plata Reis. II. p. 434 (1861); Durnf. Ibis, 1877, p. 40 (Chupat Valley, very common, breeding); Burm. An. Mus. Nac. Buenos Aires, III. part x. p. 241 (1888: throughout Patagonia).
- Caracara vulgaris*, Less. Voy. Coq. Zool. I. p. 615 (1826); id. Traité d'Orn. p. 34 (1831); Des Murs in Gay's Hist. Chil. Zool. I. p. 207 (1847); Chil. Cat. Av. Chil. p. 2 (1868); Lataste, Actes Soc. Scient. III. p. CIV. (1893; Nuble, foot of Cordilleras, Nov.).
- Pandion caracara*, J. E. Gray in Griffith's ed. Cuv. Anim. Kingd. VI. p. 235 (1829).
- Circæus brasiliensis*, Cuv. Règn. Anim. I. p. 328 (1829).
- Aquila cheraway*, Meyen (nec. Jaq.) Beitr. p. 66 (1834: Northern Chili, March).
- Polyborus tharus*, Strickl. Orn. Syn. p. 18 (1855); Cass. U. S. Expl. Exped. p. 100 (1858: Rio Negro, Patagonia, Feb.; Valparaiso, April); Scl. & Salv. Ibis, 1868, p. 188 (Gregory Bay, May; Elizabeth Isl., Feb.), 1870, p. 499 (Island of Quehny, Nov.); Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 123 (1873); Durnf. Ibis, 1876, p. 161 (Entrerios and Belgrano, Sept. breeding); Scl. P. Z. S. 1876, p. 333, pl. xxv (Patagonia); Durnf. Ibis, 1877, p. 188 (Buenos Aires, abundant resident, Baradero,

April), 1878, p. 389 (Central Patagonia, abundant resident); Gurney, P. Z. S. 1878, p. 231; Scl. & Salv. t. c. p. 435; Gibson, Ibis, 1879, p. 415 (Cape San Antonio, Buenos Aires, common, breeds Sept.–Nov.); Scl. & Salv. Voy. Chall. II. Birds, p. 105 (1881: Isthmus Harbor; Port Churrucha); Sharpe, P. Z. S. 1881, p. 10 (Port Henry, Straits of Magellan, Jan.; Tom Bay, March); Doering, Expl. al Rio Negro, Zool. p. 51 (1881: Rio Colorado & Rio Negro); White, P. Z. S. 1883, p. 41 (Cosquin, Cordova, July); Vinicig. Exped. Austr. p. 57 (1883); id. Exped. Patagonia, p. 58 (1883); id. Boll. Soc. Geogr. Ital. (2) ix, p. 797 (1884); Barrows, Auk, I. p. iii (1884; Concepcion, abundant, breeds Sept. to Nov.); Gurney, List Diurn. B. Prey, p. 12 (1884); Scl. & Huds. Arg. Orn. II. p. 81 (1889); Ridgw. Proc. U. S. Nat. Mus. XII. p. 136 (1889: Elizabeth Island); Holland, Ibis, 1890, p. 425 (Arg. Rep.); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 9, 324 (1891: Orange Bay); Frenzel, J. f. O. 1891, p. 115 (Cordoba); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo, abundant); James, New List Chil. B. p. 7 (1892); Huds. Natural. in La Plata, p. 119 (1892: id. Idle Days in Patagonia, p. 175 (1893); Holland, Ibis, 1892, p. 204 (Estancia Espartilla, common resident, breeds in Oct.); Aplin, Ibis, 1894, p. 196 (Uruguay); Lane, Ibis, 1897, p. 183 (Rio Bueno, very common); Schallow, Zool. Jahrb. Suppl. IV. p. 692 (1898: Puerto Rosaleo, Llanquihue, Nov.; Cape Espiritu Santo, Feb.; Punta Arenas, Feb.); Sharpe, Hand-list B. I. p. 242 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 613 (1900: Penguin Rookery, Feb.; Rio Pescado, May; Punta Arenas, May & June; Possession Bay, July); Carbajal, La Patagonia, Part II. p. 257 (1900); Martens, Hamb. Magalh. Sammlr. p. 5 (1900: Tierra del Fuego & Patagonia); Albert, Contr. Av. Chil. II. p. 559 (1901).

GENERAL DESCRIPTION.

Size.—Adult male. 7894 P. U. O. C. Rio Gallegos, Patagonia, 20 May, 1896. J. B. Hatcher. Or. No. 11.

Total length, about 23.50 inches.

Wing, 17.00 inches.

Culmen, 2.00 inches.

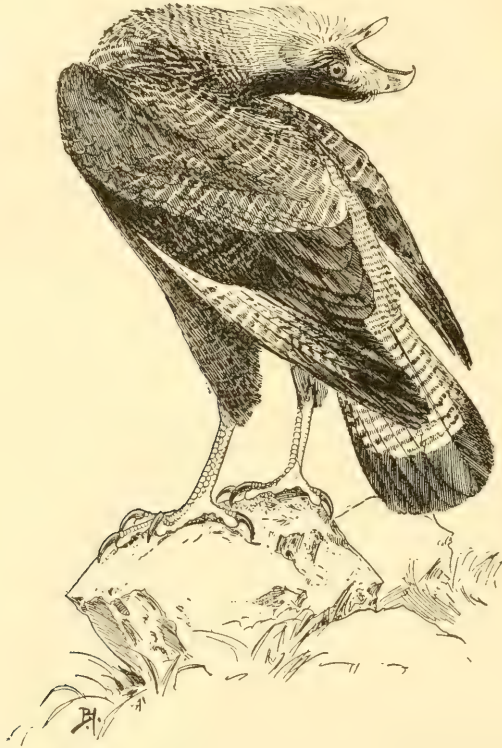
Tail, 10.5 inches.

Tarsus, 4.3 inches.

The sexes do not vary in size; there is much individual variation however.

Color.—Adult male cited above. Adults of either sex are alike when in adult plumage.

FIG. 278.



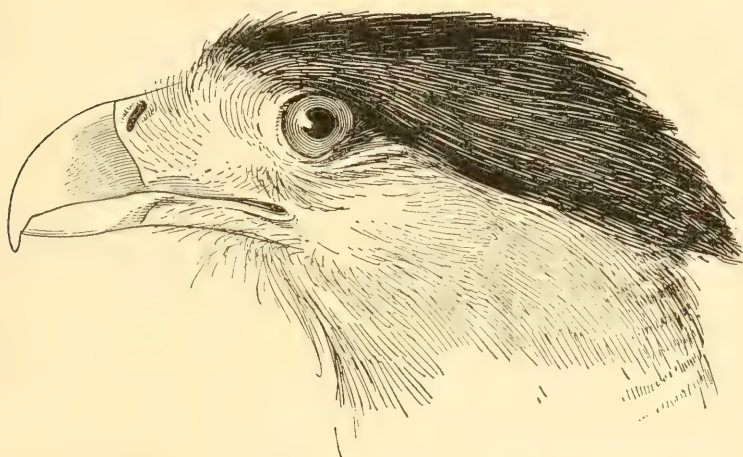
Polyborus plancus, adult male. P. U. O. C. 7894. About one-fourth natural size.

Head: A crested cap reaching from the base of the bill, above the eyes backward to the occiput, where the feathers are elongated, dark seal-brown; region in front of the eyes, and sides of the face pale isabelline, sometimes almost buffy white.

Neck: Pale isabelline or buffy white; immaculate on the throat, and barred with dark seal-brown barring elsewhere, the barring giving more prominence to the dark than to the light color.

Back: Interscapular region, back, rump and upper tail-coverts dark seal-brown, barred with isabelline or buffy white; the dark color preponderates on the upper back and the light color on the rump and upper tail-coverts.

FIG. 279.

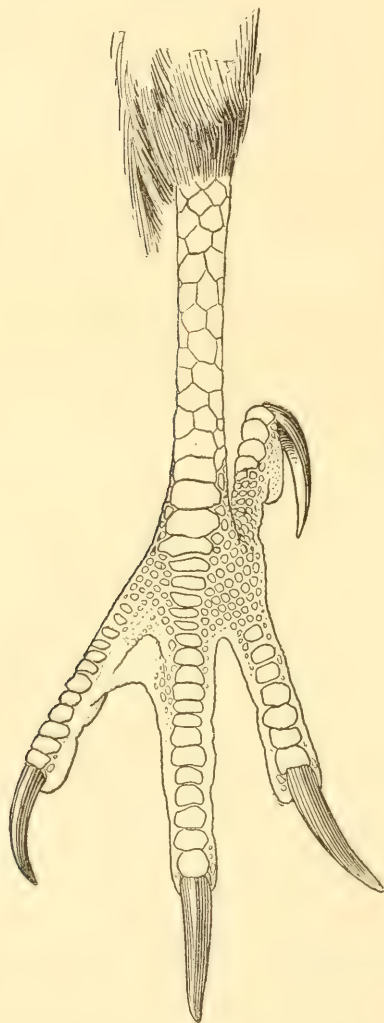


Polyborus plancus. P. U. O. C. 7894. Adult male. Details of head. Natural size.

Tail: Pale isabelline or buffy white, with a broad terminal band of deep seal-brown; the light part of the tail crossed by many, twelve or more, narrow deep seal-brown bars; the light color predominates on this part of the tail.

Wings: Primaries dark seal-brown at their tips; the remainder white or isabelline, freckled and vermiculated on their upper surfaces with dark seal-brown; on their inferior sides immaculate buffy white, or isabelline; the shafts dull ivory-white; the secondaries somewhat lighter in shade than the terminal seal-brown of the primaries and with buffy white tips very narrow and sometimes obsolete; scapulars and median wing-coverts dark seal-brown, barred with narrow isabelline or buffy white; rest of the upper wing-coverts dark seal-brown, with more or less obsolete barring of a fainter shade; under wing-coverts and axillaries uniform dark seal-brown, sometimes barred obsoletely with lighter shades of the same color.

FIG. 280.

*Polyborus plancus*. Right foot. Natural size.

Lower parts: The chest and breast dark seal-brown, narrowly barred with buffy white or isabeline; a bare crop-patch on the breast; the belly

and sides, as well as the thighs, dark seal-brown, narrowly barred with whitish, or isabeline; the under tail-coverts have the white areas predominating, so as to be in the main light, narrowly barred with dark seal-brown.

Bill: Dark horn-blue; cere and bare skin about eye carmine-red, or yellow of greater or less brilliancy according to season.

Iris: Deep hazel-brown. Crop-patch yellow.

Feet: Yellow.

FIG. 281.



Polyborus plancus. Immature female. About one-fifth natural size.

Immature Birds.—Head: Brown patch dull brown, with intermixture of rufous and buffy shading; this crown-patch reaches from the base of the bill backward above the eyes and is not as well defined as in the adult; the region in front of the eye unfeathered and with many scattered bristling hairs, almost black in color; sides of the head and face tawny buff.

Neck: Tawny buff below and brown of a rusty dull shade with tawny buff in the center of each feather, often taking the form of an irregular median stripe.

Back: Interscapular region, upper and mid-back of dull brown, each feather streaked medianly with dull buff, widening to form a tip of that color, irregular in shape at the terminus; lower back pale ashy brown, the feathers obsoletely barred and marked with dirty white; rump dirty white, the feathers barred irregularly with pale ashy brown; upper tail-coverts dirty white, without barring, except at the base of some of the coverts closest to the rump.

Tail: Dirty yellowish white, with fourteen or more rather obsolete bars of pale ashy brown and a broad terminal band, an inch and a quarter, of the same color.

Wings: Primaries, pale ashy brown for the terminal third; the other two-thirds whitish, more or less distinctly vermiculated and obsoletely barred with pale ashy brown; secondaries nearly the shade of the upper back, barred with rusty brown of a lighter shade and tipped with dirty yellowish white; tertials much like the secondaries, but with more pronounced yellowish white terminally; upper wing-coverts dull brown, the feathers becoming paler at the ends and often buff in splotches, giving to the whole an irregular mixed brown and dull buff appearance; under wing-coverts and axillaries deeper seal-brown.

Lower parts: Dull brown, each feather with a distinct median stripe and an irregular terminus of dirty buff, in some parts nearly obscuring the pattern; the thighs and flanks darker brown and obsoletely and faintly barred with dull buff; under tail-coverts dirty white, with some obscure brown barring on those nearest the vent.

Bill: Grey horn-color; the cere orange-yellow.

Iris: Hazel-brown. Bare crop-patch orange-yellow.

Feet: Yellow obscured by lead-color, which prevails on the tarsi.

Downy young: Covered with a dull white down, often buffy in tone.

The following are the colors of eyes, cere and tarsi given by Sharpe and White:

"Male juv.: Port Henry, Straits of Magellan, January 25, 1879. Cere fleshy grey; eyes black.

"Female juv.: Port Henry, January 25, 1879. Cere orange; tarsi grey and yellow.

"Female ad.: Tom Bay, March, 1879. Bill grey; cere orange-yellow; tarsi grey; feet yellow; claws black." (Sharpe, P. Z. S. 1881, p. 10.)

"Female. Cosquin, Córdova, Arg. Rep., July 27, 1882. Iris brown. Carancho." (E. W. White, P. Z. S. 1883, p. 41.)

Geographical Range.—South America from the Straits of Magellan and Fuegian Islands to Cape Horn, north on the east coast as far as the mouth of the Amazons, on the Pacific coast to 20° south latitude.

Mr. Hatcher and his assistants found this bird in most of the localities they visited in Patagonia, where the birds are common and generally distributed. The breeding season begins in September in the region here

considered and probably continues till early in December according to the latitude. They make nests of sticks and coarse material generally in trees but also in bushes and on the shelves on the faces of cliffs. From two to four eggs are laid and but a single brood is reared each year.

This is the bird generally meant when the term *carrancha* is used and the accounts in Mr. Hatcher's "Narrative" will give some idea of its abundance and boldness as well as its fearless association with man, as he encountered it at the different camps he made in Patagonia; the point of view of other writers is also appended in this connection from widely separate points in the range of these vulture-like hawks.

O. V. Aplin says of it in Uruguay (*Ibis*, p. 196, 1894): "Common, but not abundant, becoming more so, however, in autumn when the merinos begin to lamb. Two fledged young, with wings and tail half-grown, and an egg also were brought in on the 3d November. On the 26th November I saw a bird sitting on its nest in the top of a tala bush on an island in a deep laguna of the Arroyo Grande; the nest appeared to be formed of sticks and wool. I was informed that they usually breed on the flat tops of rocks and on the ground; the nests I saw in trees were hung structures. On 7th April I saw five flying together—two of them fighting in the air, uttering harsh croaks, and on the 25th May I saw seven together in the evening."

Darwin in the *Voyage of the Beagle* (*Birds*, pp. 9-11, 184), says: "Although abundant on the open plains of this eastern portion of the continent, and likewise on the rocky and barren shores of the Pacific, nevertheless it inhabits the borders of the damp and impervious forests of Tierra del Fuego and the broken coast of West Patagonia, even as far south as Cape Horn. The Carranchas (as the *Polyborus brasiliensis* is called in La Plata), together with the *P. chimango*, attend in great numbers the estancias and slaughtering houses in the neighborhood of the Plata. If an animal dies in the plain, the *Cathartes atratus* or Gallinazo commences the feast, and then these two carrion-feeding hawks pick the bones clean. Although belonging to closely-allied genera, and thus commonly feeding together, they are far from being friends. When the Carrancha is quietly seated on the branch of a tree, or on the ground, the Chimango often continues flying backwards and forwards for a long time, up and down in a semicircle, trying each time, at the bottom of the curve, to strike its larger relative. The Carrancha takes little notice, except by

bobbing its head. Although the Carranchas frequently assemble in numbers, they are not gregarious; for in desert places they may be seen solitary, or more commonly by pairs. Besides the carrion of large animals, these birds frequent the borders of streams and the sea-beach, for the sake of picking up whatever the waters may cast on the shore. In Tierra del Fuego, and on the west coast of Patagonia, they live almost exclusively on this last means of supply.

"The Carranchas are said to be very crafty, and to steal great numbers of eggs; they attempt, also, together with the Chimango, to pick the scabs off the sore backs of both horses and mules. On the one hand, the poor animal, with its ears down and its back arched and, on the other, the hovering bird, eyeing at the distance of a yard, the disgusting morsel, form a picture which has been described by Captain Head with his own peculiar spirit and accuracy. The Carranchas kill wounded animals; but Mr. Bynoe (the surgeon of the *Beagle*) saw one seize in the air a live partridge, which, however, escaped, and was for some time chased on the ground. I believe this circumstance is very unusual: at all events there is no doubt that the chief part of their sustenance is derived from carrion. A person will discover their *necrophagous* habits by walking out on one of the desolate plains, and there lying down to sleep; when he awakes, he will see on each surrounding hillock, one of these birds patiently watching him with an evil eye. It is a feature of the landscape of these countries which will be recognized by every one who has wandered over them. If a party goes out hunting with dogs and horses, it will be accompanied during the day by several of these attendants. The uncovered craw of the Carrancha, after feeding, protrudes from its breast; at such times it is, and indeed generally, an inactive, tame and cowardly bird. Its flight is generally heavy and slow, like that of the English carrion crow, whose place it so well supplies in America. It seldom soars; but I have twice seen one at a great height gliding through the air with much ease. It runs (in contradistinction to hopping), but not quite so quickly as some of its congeners. At times the Carrancha is noisy, but is not generally so; its cry is loud, very harsh and peculiar, and may be compared to the sound of the Spanish guttural *g*, followed by a rough double *rr*. Perhaps the Spaniards of Buenos Ayres, from this cause, have called it Carrancha. Molina, who says it is called Tharu in Chile, states, that when uttering its cry, it elevates its head higher and higher, till at last, with its beak wide open, the

crown almost touches the lower part of the back. This fact, which has been doubted, is true; for I have myself several times seen them with their heads backwards, in completely inverted position. The Carrancha builds a large coarse nest, either in a low cliff or in a bush or lofty tree. To these observations I may add, on the high authority of Azara, whose statements have lately been so fully confirmed by M. D'Orbigny, that the Carrancha feeds on worms, shells, slugs, grasshoppers, and frogs; that it destroys young lambs by tearing the umbilical cord; and that it pursues the Gallinazos and gulls which attend the slaughtering houses, till these birds are compelled to vomit up any carrion they may have lately gorged. Lastly, Azara states that several Carranchas, five or six together, will unite in chase of large birds, even such as herons. All these facts show that it is a bird of very versatile habits and considerable ingenuity."

In his Natural History of the Straits of Magellan (1871, pp. 133-134), Cunningham says: "In the course of our expedition we observed a few snipe and many large carrion-feeding hawks. These birds, the carranchas (*Polyborus tharus*), are extremely common on the grassy plains, and their vulturine habits, as Mr. Darwin has observed, 'are very evident to any one who has fallen asleep on the desolate plains of Patagonia; for when he wakes, he will see, on each surrounding hillock, one of these birds patiently watching him with an evil eye.' When thus perched, they assume a very erect posture, and I have frequently mistaken one in the distance for a human creature. The plumage is handsome, but the naked skin over the crop, which protrudes after a meal, communicates an unpleasant aspect to them, and they are exceedingly disagreeable to skin, as they are invariably swarming with minute and very active Anoplura."

Hudson, writing of the Caracara in Argentina says (P. Z. S. 1870, p. 112): "South of the city of Buenos Ayres, the low shore of the river is from six to eight miles in width; but for more than half this width the portion furthest from the river is frequently inundated, and covered with reeds and aquatic plants. Passing this there occurs a strip of light and dry land, running parallel with the river, composed chiefly of fossil shells, and grown over with a forest of low trees. In some places this high ground is extremely narrow; in others there are great breaks in it, through which the river passes when greatly swollen. In this strip of forest may be found all the birds inhabiting Buenos Ayres that perch on trees, not even excepting the Pampas Woodpecker (*Colaptes campestris*), of which

Mr. Darwin has so unfortunately said: 'It is a Woodpecker which never climbs a tree' (Origin of Species, p. 165). I will reserve for another letter an account of this interesting bird. Between the strips of high ground I have mentioned and the river itself is a low swampy region, often flooded, and covered with *sayus*-trees, interspersed with beds of aquatic shrubs, canes, and reeds. Though there is here in summer a tropical profusion of splendid flowers, the sombre foliage of the trees, and sere withering color of the reeds, give it a peculiarly sad and desolate appearance. This *sayus*-swamp is a great breeding place for the Carranchos (*Polybori*) and other Hawks, of which there are great numbers of all the species known in this country. But in this region I have met with a very few species of the small birds found on the pampas. This part of its fauna, like its vegetation, being derived from the north, differs from that of the adjacent country. All such species as are found exclusively in the riverine forest which I have described may be considered as reaching the extreme southern limit of their geographical range at about one degree south of the city of Buenos Ayres. I will now tell you what I have learned of some of these, and will mention others in future."

Genus IBYCTER Vieill.

Type.

Ibycter, Vieill. Analyse, p. 22 (1816); Sharpe, Cat. Bds.

Brit. Mus. i. p. 34 (1874); Sharpe, Hand-list Bds.

i. p. 244 (pt.) (1899) *I. americanus*.

Daptrius, Vieill. Analyse, p. 22 (1816) *I. ater*.

Gymnops, Spix. Av. Bras. i. p. 11 (1824) *I. ater*.

Phallobæus, Lafr. in D'Orb. Dict. iii. p. 151 (1843) . . . *I. megalopterus*.

Senex, J. E. Gray in Jard. & Selby, Ill. Orn. n. S. pl.

24 (1893) *I. australis*.

Ætriorchis, Kaup, Classif. Säug. u. Vög. p. 124 (1844). *I. australis*.

Helotriorchis, Reich. Av. Syst. Nat. pl. xcvi (1850) . . *I. australis*.

Geographical Range.—From Guatemala and Honduras southward, throughout all South America to the Straits of Magellan, Tierra del Fuego, Cape Horn and the Falkland Islands.

IBYCTER MEGALOPTERUS (Meyen).

Aquila megaloptera, Meyen, Beitr. p. 64, pl. 7 (1834).

Phalcobæus montanus, D'Orb. Voy. Amer. Mérid. Oiseaux, p. 51, pl. 2 (1835).

Milvago montanus, Darw. Voy. Beagle, Birds, p. 13 (1841).

Milvago megalopterus, Darw. *t. c.* pp. 13, 21; Lane, Ibis, 1887, p. 182 (Sacaya, Cancosa to 6,000 feet).

Polyborus megalopterus, Cab. & Tschudi, Faun. Peruana, pp. 16, 78 (1845).

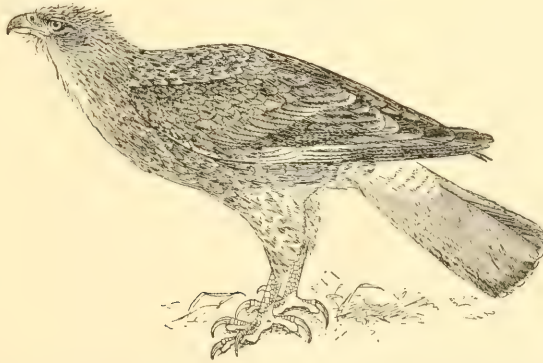
Caracara montanus, Des Murs in Gay's Hist. Chil. Zool. I. p. 210 (1847).

Phalcobæus megalopterus, Bp. Consp. Av. I. p. 13 (1850); Hartl. Naum. 1853, p. 220 (Chili); Burm. Reise La Plata, II. p. 434 (1861: Tucuman).

Milvago crassirostris, Pelz. Sitz. Akad. Wien, xlv, p. 7 (1861); id. Reise Novara, Vög. pl. i (1865: Chili).

Ibycter megalopterus, Sharpe, Cat. B. Brit. Mus. I. p. 36 (1874); Burm. An. Mus. Nac. Buenos Aires, III. part XI, p. 315 (1890: Rio Chico, Patagonia); Sharpe, Hand-list B. I. p. 244 (1899).

FIG. 282.



Ibycter megalopterus. Immature female. P. U. O. C. 7891. Rio Gallegos, Patagonia, 26 May, 1896. J. B. Hatcher. About one-sixth natural size.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 21.50 inches.

Wing, 14.5 inches.

Culmen, 1.5 inches.

Tail, 8.2 inches.

Tarsus, 1.6 inches.

The sexes do not differ appreciably in color, but the female averages a little longer than the male.

FIG. 283.



Ibycter megaloptyrus. P. U. O. C. 7891. Natural size.

Color.—Adult male.

General color: Glossy black, with deep, dull green reflections above and below, except on the rump and abdomen, which are pure white.

Head: Crested with recurved feathers on the crown; entirely glossy black, green reflections.

Neck: Glossy black like the head.

Back: Interscapular region, back and rump, glossy black with a strong tinge or reflection of deep green; the upper tail-coverts immaculate white.

Tail: Black; white at the base and a broad tip of white on each feather.

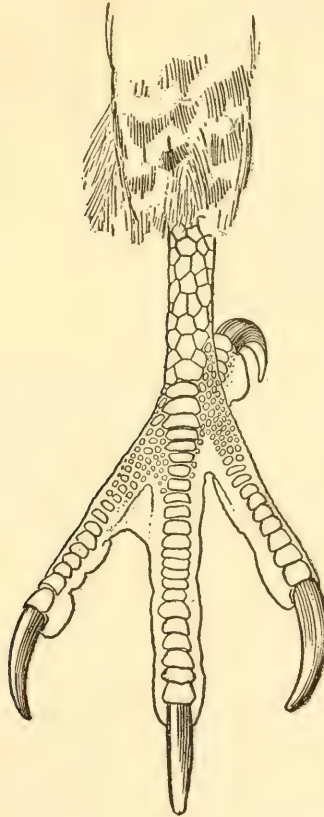
Wings: Primaries black, each quill tipped with white; secondaries black, shaded with deep brown and generally tipped with white; scapulars and upper wing-coverts black like the back; under wing-coverts white, as are some of the feathers at the bend of the wing; axillaries white.

Lower parts: Chest and breast black; flanks white with some admixture of black feathers; abdomen, thighs and under tail-coverts white.

Bill: Yellow, except at the base of both upper and lower mandible, which is dull horn-blue. Cere and bare skin about the eye, bright yellow.

Iris: Deep hazel-brown.

FIG. 284.



Ibycter megalopterus. P. U. O. C. 7891. Right foot. Natural size.

Feet: Yellow, or yellow with brownish wash.

Immature birds, and young of the year (see Figs. 285 and 286.)

Head: Brown, with a strong cinnamon tinge, each feather tipped with yel-

lowish buff; the feathers of the crest are pointed, slightly elongated and recurved, but not so conspicuously as in the adults.

Neck: Like the head, but not so reddish; the buffy shade prevailing over the brown on the chin and upper throat.

Back: Interscapular region, back and rump brown, strongly tinged with cinnamon or reddish, each feather with a yellowish buff tip; this is most emphasized on the interscapular region and is not so defined on the lower back and rump; the upper tail-coverts are very long, creamy white in color and barred rather obscurely with brown of the prevailing tone.

Tail: Dull brown with a reddish tone; the inner webs of the feathers dull buffy yellow, lighter toward the tips; a distinct terminal band of buffy whitish.

Wings: Primaries and primary coverts dark brown, greyish on the outer margin of the primaries; the inner webs of both sets of feathers white or whitish, which is less conspicuous on the outer webs, the outer web margined and the inner spotted with brownish; the rest of the wing-coverts dull brown, with little or no admixture of the buffy shading prevailing elsewhere; under wing-coverts brown, with dull buffy tips and shading.

Lower parts: More uniform dull brown, with a deep cinnamon shade, the lower abdomen and thighs paler and often yellowish with brown markings terminally; the under tail-coverts pale yellowish brown, almost cream-color.

Immature birds seem to average somewhat larger than do adults; length 22.00; wing 15.50; tail 9.0 inches. No notes as to the color of the bill, feet or naked parts were made by the naturalists who collected for Princeton.

Geographical Range.—Pacific slope of the Andes in Bolivia, Peru and Chili; southeastern Patagonia, Rio Gallegos, and region about Cape Fairweather, Patagonia; headwaters Rio Deseado, Arroyo Eke = Arroyo Gio, Hatcher's Map; Rio Chico [de Santa Cruz, the upper waters?], Patagonia (Burmeister).

Mr. Hatcher in 1896 procured two immature birds of this species on the Rio Gallegos, in southeastern Patagonia; and again in 1898 Mr. Colburn, working under Mr. Hatcher's direction, secured an immature female at a point called Arroyo Eke, at the headwaters of the Rio Deseado, far to the north and at the base of the foothills of the Cordillera. The first two birds were taken on the 26th and 29th of May, and Mr. Colburn's specimen on

the 24th of April. Burmeister's records from Rio Chico [de Santa Cruz?], Patagonia, would be close to where Mr. Colburn collected his single bird. This has generally been considered as a bird of the higher altitudes of the Cordillera in Peru and Chili; the extension of its known range to the southeastern coast of Patagonia is therefore of notable interest. There are no adults among the birds procured by the Princeton Expeditions.

IBYCTER ALBOGULARIS (Gould).

Polyborus (Phalcobæus) albogularis, Gould, P. Z. S. 1837, p. 9 (Santa Cruz, Patagonia).

FIG. 285.



Ibycter albogularis. Adult male. P. U. O. C. 8304. About one-sixth natural size.

Milvago albogularis, Darw. Voy. Beagle, Birds, pp. 13, 18, pl. I. (1841: Santa Cruz, April); Scl. Ibis, 1861, p. 23 (Patagonia); id. & Salv. Nomencl. Av. Neotr. p. 122 (1873); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888), part XI. p. 315 (1880: Santa Cruz).

Ibycter albogularis, Sharpe, Cat. B. Brit. Mus. I. p. 37 (1874); Oust. Miss. Scient. Cap Horn. Oiseaux, pp. 250, 324 (1891: Rio Gallegos, June); Sharpe, Hand-list B. I. p. 244 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Patagonia).

GENERAL DESCRIPTION:

Size.—Adult male. P. U. O. C. 8304. Arroyo Eke, Patagonia, 24 April, 1898, A. E. Colburn, collector. Or. No. 348.

Total length, 20.75 inches.

Wing, 15.25 inches.

Culmen (from cere to tip), 1.25 inches.

Tail, 8.85 inches.

Tarsus, 2.90 inches.

Females average, when adult, a little larger than the males and there is a notable variation individually without regard to sex.

FIG. 286.



Ibycter albogularis. P. U. O. C. 8304. Natural size.

Color.—Adult male. P. U. O. C. 7955. Arroyo Eke, Patagonia, 26 April, 1898, A. E. Colburn, collector. Or. No. 350.

Head: Forehead white, narrowest in the center and widening into a more or less definite spot on the sides. Crown and sides of face and head glossy black. Bare region in front and below eye, as well as on lower mandible, with black hairs. The feathers of the crown and occiput lanceolate, but not much elongated and only slightly recurved.

Neck: Above and on the sides concolor with the crown and occiput and with an undertone of deep rich brown. Chin, throat and lower neck pure white, abruptly defined against the black areas and head and neck.

Back: Upper and lower back shining black, with an undertone of deep, rich brown; rump and upper tail pure white. In some adults this is more or less spotted with chocolate, but in most cases the rump-patch is immaculate.

Tail: White at base, where the shafts of the rectrices are ivory-white; then a black region six inches or more in extent toward the terminal pure white band an inch and a half broad, the rectrices here having white shafts; the feathers of the tail are generally so worn terminally (even in newly-moulted birds), by the terrestrial feeding habits of the species as to make this terminal white band appear much narrower. The tail from below presents much the same pattern, but is duller, so far as the black region is concerned.

Wings: Black, with the prevailing undertone of deep, rich brown. Primaries white at the base, the outer vanes wholly black with brown shade; the inner vanes barred black and white for the basal third, then wholly black or brown tone, till at the end they are tipped definitely with white on the first three quills, the others having very obscure edging of white at tips. Secondaries barred on their inner vanes black and white basally, then black, with deep brown undertone, and all broadly tipped with pure white. Rest of the upper surface of the wing black like the back; the white feathers at the bend of the wing in the ulnar-radial region extend slightly on the upper surface, so as to be conspicuous when the wing is closed.

Lower parts: Immaculate pure white throughout, including the under wing-coverts and axillaries; most adult birds have a few black or dark feathers showing as bars on the thighs, but this marking is not always present.

Bill: "base of bill yellow" (J. B. Hatcher). The bill is yellow, with blue shadings near the cere. Cere "yellow" (Charles Darwin).

Feet: "Yellow" (Charles Darwin, from type).

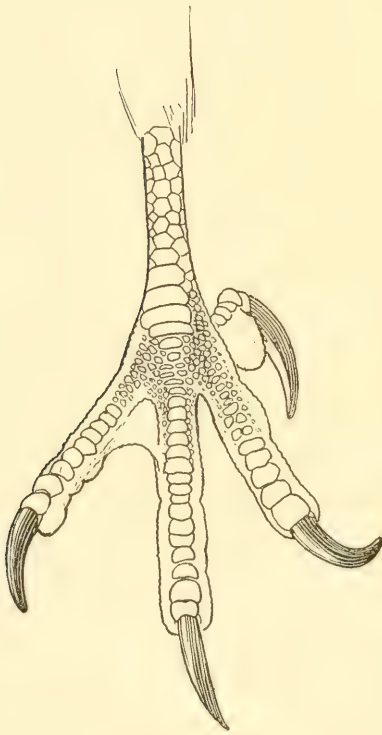
Iris: Hazel. Hazel-brown (J. B. Hatcher).

"Une femelle de cette espèce a été tuée par M. Lebrun le 16 juin 1883 sur les bords du Rio Gallegos. Elle avait les yeux d'un jaune foncé et la cire d'un jaune orange. Au contraire, le type de l'*Ibycter albigularis*

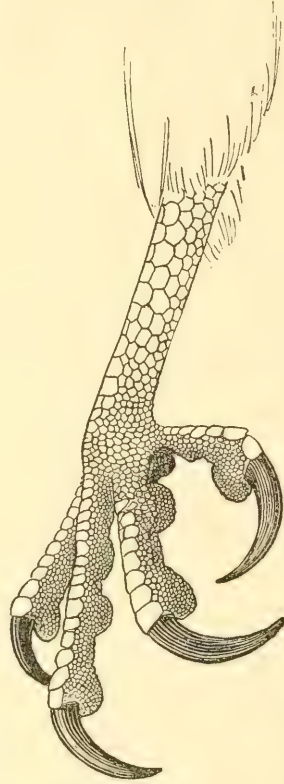
qui avait été obtenu sur les bords du Santa Cruz, par 50° de latitude Sud, a été représenté avec les yeux bruns, la cire et les pattes d'un jaune gomme-gutte." (Mission Scientifique du Cap Horn, Zoologie, p. 231, 1891.)

FIG. 287.

FIG. 288.



Ibycter albogularis. P. U. O. C. 8304. Right foot from front. Natural size.



Ibycter albogularis. P. U. O. C. 8304. Foot from the side. Natural size.

So far as is known, the immature or young birds of this species have not been observed or collected.

Geographical Range.—Southern Patagonia; Rio Gallegos, Rio Santa Cruz, headwaters Rio Deseado, Arroyo Eke = Arroyo Gio of Map.

For many years, from the 20th of April, 1834, till the 16th of June, 1883 (when M. Lebrun obtained a single bird on the Rio Gallegos) the type collected by Darwin was the sole representative of this bird in any collection. Both of these birds are adult and each is referred to below.

The Naturalists of the Princeton Expeditions were so fortunate as to discover localities where this must now be considered as at least a common bird. In late May and during early June, 1896, Mr. Hatcher secured specimens in the region about Rio Gallegos; where M. Lebrun collected his single bird in June, 1883. The particular points in this territory where a stay was made at this time were Killik Aike and Guer Aike, both near the mouth of the Rio Gallegos; Killik Aike on the estuary and Guer Aike on the river proper, some sixty miles from the coast.

Mr. Hatcher writes in the Narrative: "There are three species of carrion hawks in southern Patagonia. These pertain to three different genera, *Polyborus tharus*, *Ibycter albigularis*, and *Milvago chimango*. [An additional species *Ibycter megalopterus* also occurs.—W. E. D. S.] I could not detect that they had any distinguishing names for the different species, which, though of almost identical habits, were so unlike in color. Although frequently seen mingled together and feeding from the same carcass, it can not be said that such social relations were entirely harmonious, since they indulged almost continuously in most spirited personal conflicts, though I cannot assert that such engagements were any less frequent between individuals of the same species than between those belonging to different species." (Narrative, Princeton Exped. p. 57, 1903. Hatcher.)

From the foregoing the conclusion must be drawn that *Ibycter albigularis* was about as common as the rest of the carrion hawks which abounded in this region, even though no large series of the birds was collected. And the economy of the species, as would be expected, is so like that of its congeners as to lead to no comment. Of its breeding habits thus far we know nothing, and its several phases of plumage, correlating with age, for there are such plumages without doubt, have still to be studied by future field workers.

Mr. A. E. Colburn was conducting the work of the Princeton Expeditions during the season of 1898 at a point on the headwaters of the Rio Deseado, known as Arroyo Eke and later placed on the Hatcher map as Arroyo Gio. During the last days of April the bird in question was

common here and Mr. Colburn obtained a series of four individuals, both sexes being represented. All these additional birds, as well as a large number seen, *were in adult plumage*.

Arroyo Gio is over two hundred miles north of the Rio Gallegos country and west of it; from the coast it is distant more than a hundred and twenty miles in the foothills of the Cordillera; these carrion hawks, heretofore almost unknown, have a circumscribed distribution, so far as ascertained, but are common where they occur.

There is reason to believe that the immature plumage of *Ibycter albogularis* closely resembles that of *Ibycter megalopterus*, but as this is as yet hypothetical, the younger representatives of the species must remain for the present undescribed.

Darwin has to say of the type collected by him at Santa Cruz in April, 1845: "Mr. Gould, at the time of describing this species, entertained some doubts whether it might not eventually prove to be the *Phalcobæus montanus* of D'Orbigny [= *I. megalopterus*], in a state of change. I have carefully compared it with the description of the *P. montanus*, and certainly, with the exception of the one great difference of *M. albogularis* having a white breast, whilst that part in the *P. montanus* is black, the points of resemblance are numerous and exceedingly close. The *M. albogularis*, appears to be rather larger, and the proportional lengths of the wing feathers are slightly different; the cere and tarsi are not of so bright a colour; the middle toe has fifteen scales on it instead of having sixteen or seventeen. The black shades of the upper surface are pitchy, instead of having an obscure metallic gloss, and the feathers of the shoulders are terminated with brown, so as to form a collar, which is not represented in the figure of *P. montanus*, given by M. D'Orbigny. Although the main difference between the two birds is the colour of their breasts, yet it must be observed, that in the *M. albogularis* there is some indication of an incipient change from white to brown in the plumage of that part. But as M. D'Orbigny, who was acquainted with the young birds of *P. montanus* (of which he has given a figure), does not mention so remarkable a modification in its plumage, as must take place on the supposition of *M. albogularis* being an immature bird of that species; and as the geographical range of the two is so very different, I am induced to consider them distinct. Moreover, on the plains of Santa Cruz, I saw several birds, and they appeared to me similar in their colour-

ing. The *M. albogularis* is remarkable from the confined locality which it appears to frequent. A few pair were seen during the ascent of the river Santa Cruz (Lat. 50° S.) to the Cordillera; but not one individual was observed in any other part of Patagonia. They appeared to me to resemble, in their gait and manner of flight, the *P. Brasiliensis*; but they were rather wilder. They lived in pairs, and generally were near the river. One day I observed a couple standing with the Carranchas and *M. pezoporus*, at a short distance from the carcass of a guanaco, on which the condors had commenced an attack. These peculiarities of habit are described by M. D'Orbigny in almost the same words, as occurring with *P. montanus*; both birds frequent desert countries; the *P. montanus*, however, haunts the great mountains of Bolivia, and this species, the open plains of Patagonia.

"In the valleys north of 30° in Chile, I saw several pair, either of this species or of the *P. montanus* of D'Orbigny (if, as is probable, they are different) or of some third kind. From the circumstance of its not extending (as I believe) so far south even as the valley of Coquimbo, it is extremely improbable that it should be the *M. albogularis*—an inhabitant of a plain country twenty degrees further south. On the other hand, the *P. montanus* lives at a great elevation on the mountains of Upper Peru; and therefore it is probable that it might be found in a higher latitude, but at a less elevation. M. D'Orbigny says, 'Elle aime les terrains secs et dépourvus de grands végétaux, qui lui seraient inutiles; car il nous est prouvé qu'elle ne se perche pas sur les branches.' In another part he adds, 'Elle descend cependant quelquefois jusque pres de la mer, sur la côte du Pérou, mais ce n'est que pour peu de temps, et peut-être afin d'y chercher momentanément une nourriture qui lui manque dans son séjour habituel; peut-être aussi la nature du sol l'y attire-t-elle; car elle y trouve les terrains arides qui lui sont propres.'¹ This is so entirely the character of the northern part of Chile, that it appears to me extremely probable, that the *P. montanus*, which inhabit the great mountains of Bolivia, descend in northern Chile, to near the shores of the Pacific; but that further south, and on the opposite side of the Cordillera, it is replaced by an allied species—the *M. albogularis* of Santa Cruz." (Darwin, Voy. Beagle, Birds, pp. 19-21. 1841.)

¹ Voyage dans l'Amerique Meridionale, Partie, Oiseaux, p. 52.

IBYCTER CIRCUMCINCTUS Scott.

Ibycter circumcinctus Scott, Auk, XXVII, p. 152, 1910.

Type.—Princeton University Collection, 8993. Adult male. Chubut, Patagonia, February, 1896. Collected by the Museo de la Plata. (Original Number 8; exchange with Princeton University.)

Size.—Male cited.

Total length, about 24 inches.

Wing, 16.25 inches.

Culmen, from in front of cere, 1.30. Cere at forehead, 0.40.

Tail, 10.30 inches.

Tarsus, 2.55 inches.

Color.—General color: Black and white. Black preponderating above; white prevailing below.

Head: Black with lanceolate feathers, prolonged on the occiput into a decided occipital crest; undershading throughout deep brown.

Neck: Black above and on the sides, with deep brown undershade. Chin and upper neck below pure white; this is divided from the white lower neck by a black band, more or less variegated with white markings on some of the feathers; this band is an inch and a half wide. Lower neck white, with the black of the sides confining it to a narrow strip, which widens on the upper breast.

Back: Mantle and lower back black with a dull green gloss and under-shade of deep brown. Rump and upper tail-coverts pure white.

Tail: The base definitely white, the rectrices here having ivory-white shafts; thence black prevails for six inches and the shafts of the rectrices are shining black; a terminal pure white band about an inch and a half broad, and here the shafts of the rectrices are again ivory-white. Below, the tail is duller, but presents the same pattern.

Wings: Above black, with a dull brown undertone, obscure and green reflections; the quills black, both the primaries and secondaries tipped with white. Small plumes along bend of wing conspicuously white, when wing is closed; the feathers of the border of the shoulders first white, then chiefly black, with an admixture of white, and finally wholly black.

Under parts: The chin and throat white, separated from the white of the breast by a broad black band, somewhat variegated with white markings, irregular in shape and size, on some of the feathers. The white on the lower throat is confined to a narrow strip in the center, bounded by

black, connected with the neck-band on the sides; the white area widens to three inches on the upper breast, the black border extending well down and defining the upper abdomen. The rest of the under surface, including the lower tail-coverts, the axillaries and under wing-coverts, pure white.

Feet and tarsus deep yellow; the soles shaded with dull brown.

Iris hazel-brown.

Bill deep yellow, with a shading of blue close to the cere. Cere and naked skin of forehead and lower mandibles orange, with a strong shading of carmine.

Geographical Range.—Province of Chubut, Patagonia.

This carrion hawk, apparently heretofore undescribed, was received in an exchange of bird-skins from the Museo La Plata; the bird is undoubtedly fully adult, is a male, and was collected in Chubut in February, 1896. It was catalogued in the collection of birds referred to above as No. 8 and labelled *Ibycter americanus*, but evidently is from a region where that species has not been obtained, and is thrown out of the *americanus* group by the difference of the coloring of the underparts and of the tail. *Ibycter megalopterus* has not been referred thus far to the territory in which this seemingly new bird was collected; nor does the coloring of the under parts seem to warrant the possibility that this is an unknown plumage of *megalopterus*. The conspicuous necklace of black crossing the pure white of the neck of this bird distinguishes it at once, in the adult plumage, from any of its allies.¹

IBYCTER AUSTRALIS (Gmelin).

Statenland Eagle, Lath. Gen. Syn. I. p. 40 (1781).

Falco australis, Gm. Syst. Nat. I. p. 259 (1788: ex Lath.).

Morphnus novæ-zealandiæ, Cuv. Règn. Anim. I. p. 318 (1817).

Falco novæ-zealandiæ, Temm. Pl. Col. I. pls. 192, 224 (1823).

Polyborus novæ-zealandiæ, Vig. Zool. Journ. I. p. 336 (1824); Darw.

Journ. Voy. Advent. & Beagle, p. 66 (1829); id. Natural. Voy.

Beagle, p. 57 (1882: Falkland Islands).

Caracara novæ-zealandiæ, Less. Voy. Coq. Zool. I. p. 615 (1826: Falkland Islands).

¹ While it is impossible to decide positively upon the status of this species, I strongly suspect that it will prove to be nothing more than *I. albogularis*, with remains of the immature plumage on the neck and breast.—Witmer Stone.

- Circaëtus novæ-zealandiæ*, Cuv. Règn. Anim. I. p. 328 (1829).
Circaëtus antarcticus, Less. Traité d'Orn. p. 49 (1831: Falkland Islands & Tierra del Fuego).
Senex australis, J. E. Gray, in Jard. & Selb. Illustr. Orn. pl. 24 (1839); Gurney, List Diurn. B. Prey, p. 12 (1884); Salvad. Ann. Mus. Genov. (2) xx, p. 613 (1900: Penguin Rookery; Porto Cook, March).
Milvago leucurus, Gould, Voy. Beagle, Birds, p. 15 (1841: Falkland Islands, March); id. P. Z. S. 1859, p. 93.
Ætriorchis novæ-zealandiæ, Kaup, Classif. Säugeth. ii. Vög. p. 124 (1844).
Caracara leucurus, Des Murs in Gay's Hist. Chil. Zool. I. p. 213 (1847).
Milvago australis, Gray, Cat. Accipitr. Brit. Mus. p. 30 (1848); Abbott, Ibis, 1861, p. 150 (East Falklands, resident, breeds in Nov.); Schl. & Salv. Nomencl. Av. Neotr. p. 122 (1873); iid. P. Z. S. 1879, p. 309 (Falkland Islands); iid. Voy. Chall. II. Birds, p. 150 (1881; eggs); Burm. An. Mus. Nac. Buenos Aires, iii, part x, p. 241 (1888: Falkland Islands).
Ibycter australis, Kaup, Arch. fur Nat. 1850, p. 41; Sharpe, Cat. B. Brit. Mus. I. p. 38 (1874); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 14, 324 (1891: Falkland Islands); Sharpe, Hand-list B. I. p. 244 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Falklands).
Polyborus australis, Bp. Consp. Av. I. p. 13 (1850); Cass. U. S. Expl. Exped. p. 101 (1858: Orange Harbour, Tierra del Fuego); Schl. Mus. Pays Bas, Polybori, p. 3 (1862: Falkland Islands).
Ætriorchis australis, Bonap. Rev. et Mag. de Zool. 1854, p. 11.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 25.00 inches.

Wing, 16.65 inches.

Culmen, 2.0 inches.

Tail, 11.0 inches.

Tarsus, 3.35 inches.

Color.—Adult male.

General color: Black, with lanceolate streaks and white spots on the feathers, at different points.

Head: Black; the feathers of the occiput forming a crest.

Neck: Black; the throat, the nape and hind neck decorated with white, lanceolate streaks on the feathers.

Back: Entirely black, save a few of the outer upper tail-coverts, which are streaked with lanceolate, white markings.

Tail: Black; each feather broadly tipped with white, the whole making a conspicuous, terminal white band.

Wings: Primaries and secondaries very dark brown, nearly black and slightly tipped with ashy white. Rest of the wing black.

Lower parts: Black; the breast with lanceolate white markings like those of the throat, which become on the abdomen tiny, apical, roundish spots on each feather; inner face of the thighs and the feathers about the vent, tawny brown; the under tail-coverts blackish, with narrow white margins.

Bill: Yellow, becoming blue horn-color at the base.

Iris: Dark hazel-brown. Bare skin of face and cere yellow; bare crop-patch yellow.

Feet: Yellow, obscured more or less with brown.

Immature birds and young of the year.—Head: Deep, smoky brown; the feathers of the crown with buffy brown tips and the sides of the face shaded with yellowish brown.

Neck: Blackish brown above and on the nape, where the feathers have buffy brown tips; the brown of the nape and back of the neck shading into yellowish brown on the sides of the neck and beneath.

Back: Dull, smoky brown, except the upper tail-coverts, which are lighter yellowish brown.

Tail: Yellowish brown, much like the upper coverts in tone; the external margins of the feathers shading into darker brown.

Wings: Primaries clear, yellowish ocher at base, becoming dull, smoky brown at their exposed surface, when the wing is closed, and so matching the back; the rest of the wing dull, smoky brown.

Lower parts: Dull, smoky brown, with obsolete markings, spots in the center of each feather, of a reddish brown shade; this condition is plainest on the breast and more obscure on the abdomen, while the sides and flanks are immaculate, dull, smoky brown.

Bill: Horn-brown, with a yellowish tip to the lower mandible.

Iris: Brown. Cere and bare skin about the eye, slaty blue.

Feet: Feet and legs slaty blue.

Geographical Range.—Peculiar to the Falkland Islands.

Genus MILVAGO Spix.

Type.

- Milvago*, Spix, Av. Bras. i. p. 11 (1824); Sharpe, Hand-
List Bds. i. p. 244 (1899). *M. chimachima*.
Ibycter (part I., *Milvago*), Sharpe, Cat. Birds Brit. Mus.
i. p. 34 (1874) *M. chimachima*.

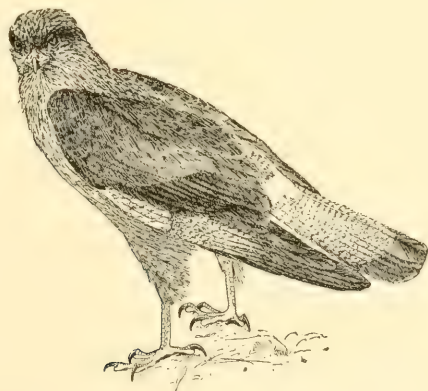
Geographical Range.—From Panama southward throughout South America to the Straits of Magellan, Tierra del Fuego and Cape Horn.

MILVAGO CHIMANGO (Vieillot).

- Chimango, Azara, Apunt. I. p. 47 (1802).
Polyborus chimango, Vieill. N. Dict. d'Hist. Nat. V. p. 260 (1816: ex Azara); D'Orb. Voy. Amer. Mèrid. p. 60, pl. 2, figs. 3, 4 (1835: Patagonia); Schl. Mus. Pays Bas, Polibori, p. 6 (1862: Chili); Darw. Natural. Voy. Beagle, p. 57 (1882: Patagonia); Phil. Ornith. IV. p. 158 (1886: Quebrada encantada).
Haliæetus chimango, Less. Traité d'Orn. p. 43 (1831: Montevideo).
Aquila pezopora, Meyen, Beitr. p. 62, pl. 6 (1834: Chili).
Milvago pezoporus, Darw. Voy. Beagle, Birds, p. 13 (1841: Port Desire); Fraser, P. Z. S. 1843, p. 109 (Chili, common); Burm. La Plata Reise, II. p. 434 (1861: Banda Oriental; Mendoza); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: throughout Patagonia); Carbajal, La Patagonia, part II. pp. 256, 257 (1900).
Milvago chimango, Darw. Voy. Beagle, Birds, p. 14 (1841: Maldonado; La Plata); Hartl. Ind. Azara, p. 1 (1847): id. Naum. 1853, pp. 209; 220; Cass. U. S. Expl. Exped. p. 99 (1858: Rio Negro, Patagonia), Cab. Reis. Novara, Vög. p. 6 (1865: Chili); Scl. & Salv. Ibis, 1868, p. 187 (Sandy Point, Dec.), P. Z. S. 1868, p. 143 (Conchitas, resident); Huds. P. Z. S. 1872, p. 536 (Rio Negro, Patagonia); Scl. & Salv. Nomencl. Av. Neotr. p. 122 (1873); Durnf. Ibis, 1876, p. 161 (Buenos Aires), 1877, p. 40 (Chupat Valley, common), p. 188 (Buenos Aires, resident and numerous), 1878, p. 398 (Central Patagonia, resident); Scl. & Salv. P. Z. S. 1878, p. 435; Gibson, Ibis, 1879, p. 420 (Cape San Antonio, Buenos Aires, common resident, breeds Oct. and Nov.); Durnf. Ibis, 1880, pp. 416, 424, 429 (Tucuman, May and June); Scl. & Salv. Voy. Chall. II. Birds, p. 105 (1881: Puerto Bueno; Sandy Point); Doering, Expl. al Rio Negro,

Zool. p. 51 (1882); White, P. Z. S. 1882, p. 623 (Salta, Oct., breeding; Punta Lara, Feb.); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Gurney, List Diurn. B. Prey, p. 13 (1884); Barrows, Auk, I. p. 111 (1884: Lower Uruguay, abundant); Withington, Ibis, 1888, p. 470 (Lomas de Zamora); Scl. & Huds. Argent. Orn. II. p. 74 (1889); Ridgw. Proc. U. S. Nat. Mus. XII. p. 136 (1889: Laredo Bay); Holland, Ibis, 1890, p. 425 (Arg. rep.); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 15, 324 (1891: Orange Bay; New Years Sound, April); Frenzel, J. f. O. 1891, p. 115 (Córdoba); James, New List Chil. B. p. 7 (1892); Holland, Ibis, 1892, p. 204 (Estancia Espartilla, resident, breeds in Sept.); Hudson, Idle Days in Patagonia, p. 25 (1893); Aplin, Ibis, 1894, p. 196 (Uruguay); Lane, Ibis, 1897, p. 181 (Chili, everywhere common); Schalow, Zool. Jahrb. Suppl. IV. p. 692 (1898: Coquimbo, Nov.; La Serena, Dec.); Gosse in Fitzgerald Highest Andes, App. c. p. 343 (1899: Mendoza, common; Horcones Valley up to 13,000 feet); Sharpe, Hand-list B. I. p. 244 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 613 (1900: Punta Arenas, May; Isola Hoste, June); Albert, Contr. Estud. Aves Chil. II. p. 553 (1901).

FIG. 289.



Milvago chimango. P. U. O. C. 8675. About one-fourth natural size.

Caracara chimango, Des Murs in Gay's Hist. Chil. Zool. I. p. 211 (1847); Phil. & Sandb. Cat. Av. Chil. p. 3 (1868); Lataste, Actes, Soc. Scient. Chili, III. p. civ (1893: Nuble, foot of Cordilleras).

Ibycter chimango, Kaup, Arch. für Naturg. 1850, p. 41; Sharpe, Cat. B. Brit. Mus. I. p. 41 (1874); id. P. Z. S. 1881, p. 10 (Cockle Cove, Feb.; Talcahuano, Sept.); Carbajal, La Patagonia, Part II. p. 257 (1900); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Tier. d. Fuego).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8675. La Plata, Argentina, April, 1895. Total length, about 17.25 inches.

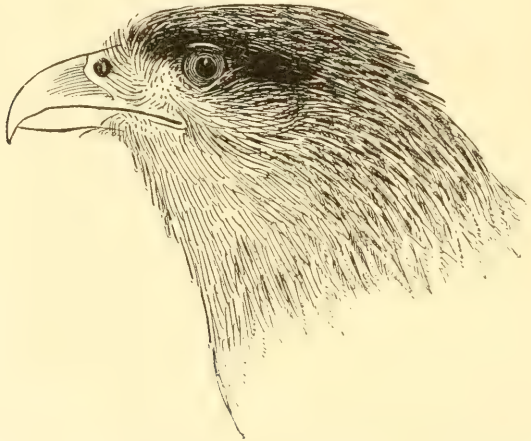
Wing, 12.2 inches.

Culmen, 1.2 inches.

Tail, 7.6 inches.

Tarsus, 2.6 inches.

FIG. 290.



Milvago chimango. P. U. O. C. 8675. Detail of head. Natural size.

Color.—Adult.

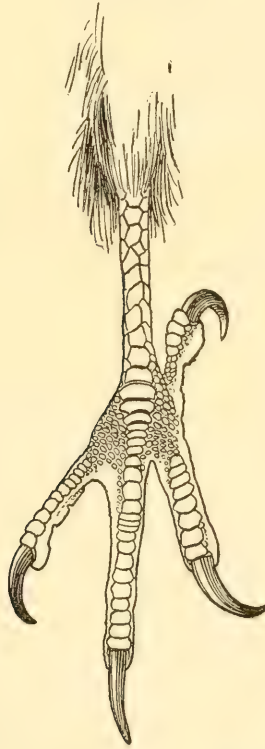
General color.—Reddish brown, more or less shaded with ashy above and with whitish and cinnamon below; tail greyish, with a conspicuous sub-terminal band of deep seal-brown.

Head: Crown of characteristic lanceolate feathers, dull reddish brown, with median black streaks and shaded marginally and terminally with obscure ashy grey; forehead and a pronounced supraciliary stripe, reaching back to the ears, black or blackish; the cheeks and sides of the face with fine black lines, on a lighter, yellowish brown ground.

Neck: Reddish brown, the feathers shaded and decorated as on the crown; the chin and throat like the sides of the face, the throat even lighter.

Back: Interscapular region and lower back a duller, reddish brown, shaded terminally with ash; the rump brighter and distinctly barred with equally wide bands of reddish brown and whitish; the upper tail-coverts pure ivory-white.

FIG. 291.

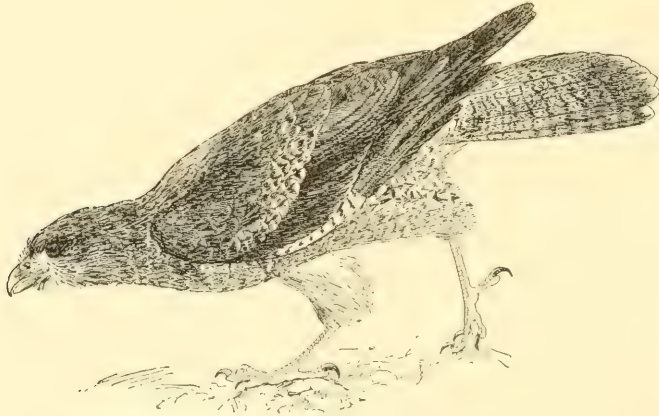


Milvago chimango. P. U. O. C. 8675. Detail of foot. Natural size.

Tail: Ashy grey, white at the base, with tiny flecks of brown on this ground-color; a broad sub-terminal band of deep seal-brown and a narrow white terminal bar, each feather being tipped with that color.

Wings: All the coverts like the interscapular region, reddish brown, with ashy tips to the feathers; the quills all brown of the same tone, shaded with ashy on their exposed surfaces; the primaries whitish at base and for two-thirds their length, this color obscured by minute flecking of dull brown; the shafts ivory-white; the primary coverts white and flecked to a less degree, and crossed by three indistinct brown lines, or narrow bands; the secondaries brown like the back, and, seen from above, very obscurely barred, or spotted irregularly with dull cinnamon; all the quills from beneath present a strong cinnamon tint on both vanes and this ground color is barred distinctly and rather narrowly with dark brown; under wing-coverts and axillaries cinnamon, barred with dark brown in narrow bars far apart.

FIG. 292.



Milvago chimango. P. U. O. C. 7887. Immature male. Punta Arenas, Chili, 3 January, 1898. One-fourth natural size.

Lower parts: More reddish brown than above; the feathers with pronounced ashy or whitish tips, the whole having a decidedly mottled character, the thighs inclining to pale cinnamon, and the under tail-coverts creamy white, sometimes washed with pale cinnamon.

Bill: Greenish yellow; the cere dull pinkish.

Iris: Varying shades from grey to hazel-brown.

Feet: Olive greenish, with a strong yellow tinge.

Immature birds and young of the year: Similar in general appearance

to adults; the general color is more pervaded by cinnamon, giving to the whole a redder shade; the region about the eye has no defined supraciliary stripe, but there is here the same shade that prevails on the crown; the back is deep brown, relieved by ashy edging to each feather; the rump and upper tail-coverts much as in the adult; the tail with no defined subterminal bar, but otherwise much as in old birds, not so light, however, and more coarsely freckled with dark brown. This is also true of the light portion of the primaries and of the primary coverts, and the bands across these are not distinct as in the adult; seen from beneath, the tail is obscurely barred with dark brown; the inferior surface of the wings is more strongly cinnamon than in adult birds and the dark bars on this ground show very distinctly; the lower parts are more pervaded with white and ashy shades and the browns are redder than in old birds; there is fairly distinct barring on the abdomen and flanks, cinnamon-brown markings on a dirty white ground; the thighs are strongly shaded with cinnamon and the under tail-coverts are creamy white.

Geographical Range.—The southern portion of South America; Tierra del Fuego and Patagonia; Chili, and north to 20° south latitude on the Pacific coast; in the interior of the country to about 24° south, but on the Atlantic coast appearing as far north in Eastern Brazil as the region immediately north of Rio de Janeiro.

On all the journeys which the Princeton naturalists made in Patagonia they encountered this smallest of the carrion hawks, and while it does not appear on the whole to be as numerous as its large congeners, it is a decided feature in the Patagonian bird fauna.

The birds nest in trees and the breeding season begins in the northern range of the species as early as late September, while in Patagonia the nesting time occurs throughout November. The birds appear to be resident throughout their range, there being abundant records of their occurrence at all points during every season of the year.

Sharpe (P. Z. S. 1881, p. 10) gives the following color notes: "Male: Cockle Cove, February 9, 1879. Legs olive-green, claws black; irides dark grey; cere grey.

"Male: Talcahuano, September, 1879. Eyes light brown; legs grey; bill grey and white."

M. J. Nicoll (Ibis, Jan., 1904, pp. 44-45) says:

"Iris black; bill, tarsi, and toes greenish yellow."

O. V. Aplin (Ibis, 1894, p. 196) says of this species in Uruguay:

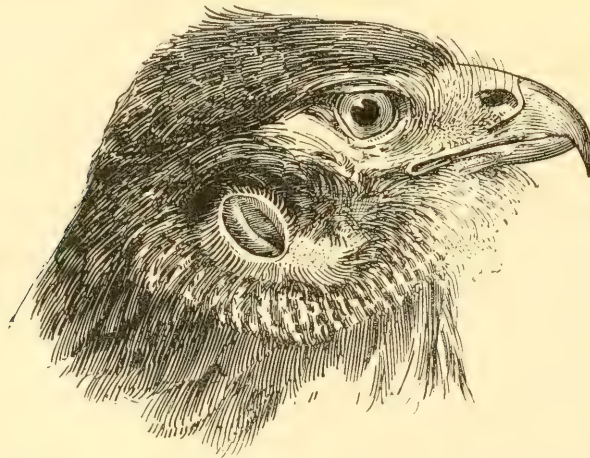
"At Sta. Elena less common than the Carancho at all seasons, but more abundant in autumn than in spring and summer. At the Rio Negro they were more common. Some were remarkably tame; a pair at Sta. Florencia might be seen any morning on the quinta fence, and I saw a pair sitting on the posts of the corral at a puesto on Sta. Elena, quite indifferent to the barking of several dogs which came out at us."

M. J. Nicoll found it fairly abundant in Molineux Sound, where it frequented the water's edge. (Ibis, Jan. 1904, pp. 44-45.)

Subfamily ACCIPITRINÆ.

Sharpe, Cat. Bds. Brit. Mus. i. p. 46 (1874); Sharpe, Hand-list Bds. i. p. 244 (1899).

FIG. 293.



Head of *Circus hudsonius*; showing the facial ruff. The feathers are laid back to expose the external ear. Life size. Drawn from a bird just killed.

Genus CIRCUS Lacépède.

Type.

Circus, Lacép. Tableaux, Ois., 1799, p. 4; Sharpe, Cat.

Bds. Brit. Mus. i. p. 50 (1874); Sharpe, Hand-list

Bds. i. p. 245 (1899). *C. æruginosus*.

Pygargus, Koch, Syst. Baier. Zool. p. 127 (1816) *C. cyaneus*.

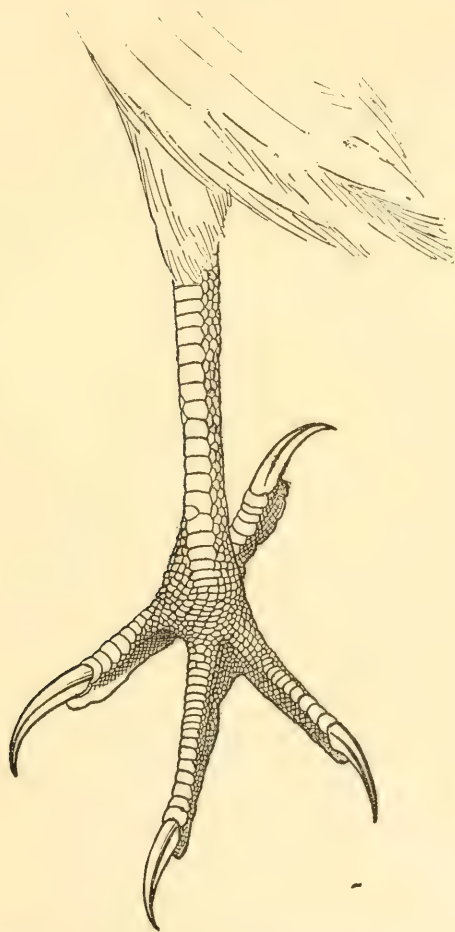
Strigiceps, Bp. Saggio Distr. Met. Anim. Vertebr. p. 37
(1831).

C. cyaneus.

Glaucopteryx, Kaup, Class. Säug. u. Vög. p. 113 (1844).

C. pygargus.

FIG. 294.



Circus hudsonius. Detail of foot. From bird just killed. Natural size.

Spizacircus, Kaup, Mus. Senckenb. iii. p. 258 (1845)

C. buffoni.

Spilocircus, Kaup, Isis, 1847, p. 89.

C. assimilis.

Pterocircus, Kaup, Arch. f. Naturg. xvi. p. 32 (1850).

C. pygargus.

Geographical Range.—The greater portions of both the Eastern and Western Hemispheres; parts of Australia; the genus *Circus* however is not represented throughout the area defined, but seems local and there are wide gaps and breaks in the continuity of distribution.

CIRCUS CINEREUS Vieillot.

Gavilan del campo ceniciento, Azara, Apunt. I. p. 145 (1802).

Gavilan del campo pardo, Azara, t. c. p. 151.

Circus cinereus, Vieill. N. Dict. d'Hist. Nat. IV. p. 454 (1816: ex Azara, p. 145); D'Orb. Voy. Amer. Mérid. Ois. p. 110 (1835: Patagonia and Falkland Islands); Darw. Voy. Beagle, Birds, p. 30 (1841: Falkland Islands); Fraser, P. Z. S. 1843, p. 109 (Chili); Hartl. Ind. Azara, p. 3 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 227 (1847); Gould, P. Z. S. 1859, p. 94 (Falkland Islands); Scl. P. Z. S. 1860, p. 384 (loc. cit.); Abbott, Ibis, 1861, p. 152 (East Falkland Islands, resident); Burm. Reis. La Plata, II. p. 439 (1861: Rosario); Schl. Mus. Pays Bas, II. Circi, p. 5 (1862: Falkland Islands); Pelz. Reis. Novara, Vög. p. 13 (1865: Chili); Scl. & Salv. P. Z. S. 1868, p. 143 (Conchitas); Phil. & Landb. Cat. Av. Chil. p. 5 (1868); Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 118 (1873); Lee, Ibis, 1873, p. 131 (Arg. Rep.); Sharpe, Cat. B. Brit. Mus. I. p. 56 (1874: Straits of Magellan); Durnf. Ibis, 1877, p. 38 (Chupat Valley), p. 187 (Buenos Aires, occasional); id. Ibis, 1878, p. 397 (Central Patagonia, breeds in Oct.); Gibson, Ibis, 1879, p. 411 (Cape San Antonio, not observed breeding); Durnf. Ibis, 1880, p. 423 (Tucuman, June); Sharpe, Cat. P. Z. S. 1881, p. 10 (Coquimbo, June); Doering, Expl. al Rio Negro, Zool. p. 49 (1882: Rio Negro & Rio Colorado); Salv. P. Z. S. 1883, p. 426 (Coquimbo); Gurney, List Diurn. B. Prey, p. 20 (1884); Barrows, Auk, I. p. 30 (1884: Bahia Blanca, Feb.; Ventana; Carhué); Burm. Ann. Mus. Nac. Buenos Aires, III, part X. p. 241 (1888: Patagonia), part XI. p. 316 (1890: Rio Chico del Chubut); Withington, Ibis, 1888, p. 469 (Lomas de Zamora, common, but not observed breeding); Scl. & Huds. Argent. Orn. II. p. 57 (1889: Patagonia; Falkland Islands); Holland. Ibis, 1890, p. 425 Estancia Espartilla, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 19, 324 (1891: Punta Arenas, Feb.); Frenzel, J. f. O. 1891, p. 114

(Córdoba); Holland, Ibis, 1891, pp. 16, 18; id. Ibis, 1892, p. 203 (Estancia Espartilla, resident); Schallow, Zool. Jahrb. Suppl. IV. p. 696 (1898); Sharpe, Hand-list, B. I. p. 245 (1899); Carbajal, La Patagonia, Part II. p. 256 (1900); Salvad. Ann. Mus. Genov. (2) xx, p. 614 (1900: Santa Cruz, Jan.; Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Tierra del Fuego; Falkland Islands); Albert, Contr. Estud. Av. Chil. II. p. 503 (1901).

FIG. 295.



Circus cinereus. Adult male (in front) and female. One-fourth natural size.

Circus campestris, Vieill, N. Dict. d'Hist. Nat. IV. p. 455 (1816: ex Azara, p. 151)

Falco histrionicus, Quoy & Gaim. Voy. Uranie, Zool. pp. 93, 94, pls. 15, 16 (1824; Falklands).

Circus histrionicus, Less. Voy. Coq. Zool. I. p. 616 (1826: Falkland Islands); Vigors, Zool. Journ. III. p. 425, note (1827: Port Famine); Hartl. Naum. 1853, p. 220 (Chili).

Circus poliopterus, Cab. & Tschudi, Faun. Peruana, p. 113, pl. 3 (1845); Schl. Mus. Pays. Bas. II. Circi, p. 6 (1862: La Plata); Pelz, Reis. Novara, Vög. p. 13 (1865: Chili).

Spizacircus histrionicus, Kaup. Contr. Orn. 1850, p. 59.

Strigiceps histrionicus, Bp. Consp. Av. I. p. 35 (1850).

GENERAL DESCRIPTION.

Size.—Adult male. P. U. O. C. 7904. Near Coy Inlet, Patagonia, 2 November, 1896. J. B. Hatcher. Or. No. 238.

Total length, 19.00 inches.

Wing, 12.90 inches.

Culmen, to cere, 0.80; with cere, 1.25 inches.

Tail, 8.60 inches.

Tarsus, 2.75 inches.

Adult female, P. U. O. C. 7905. Near Coy Inlet, Patagonia, 2 November, 1896. J. B. Hatcher. Or. No. 236.

Total length, 21.80 inches. Wing, 14.60 inches. Tail, 9.75 inches.

Blue phases of plumage.

Color.—Adult male cited.

FIG. 296.



Circus cinereus. Head of adult male. P. U. O. C. 7904. Natural size.

General color above ashy blue, with white rump. Below, ashy blue on throat and breast, the remainder of the under parts barred deep cinnamon and white transversely; the bars about equal in width and very regular in disposal.

Head: Forehead inclined to whitish, which becomes definite in the loreal region; the white of the loreal region thickly covered with fine black hairs recurved backward. Remainder of the head ashy blue, with a faint whitish eyebrow-stripe, outlined externally with a narrow hair-line of black. A pronounced facial disk, or ruff, back of the ear-coverts, slaty blue in color.

Neck: Concolor with head; the shade of ashy blue varies somewhat and is lightest on the throat and on the ruffs back of the ear.

Back: Concolor with the head and hind neck; the upper tail-coverts white, forming a conspicuous patch; the upper tail-coverts have in some cases a sub-terminal bar of ashy blue.

Tail: From above when closed, appears to be frosted ashy blue, with a white terminal and a broader subterminal band of dark brown, almost black, heavily frosted with ashy blue. When spread, the two central rectrices alone are seen to be ashy blue with the marks described; the other rectrices have only part of the outer webs ashy blue, and that portion of the inner webs which is exposed when the tail is spread is the same color; the white terminal bar is present, as is the dark subterminal band. The rest of each tail-feather, both on the inner and outer webs, is white, more or less notched or barred and somewhat suffused with dusky and slaty blue. From below, the tail appears white, with a more or less perfect sub-terminal band of deep ash and bars or conspicuous notches, at least four in number, on the inner web of each feather.

Wing: The primaries are blackish, frosted on the exterior webs with ashy blue, concolor with the back; the concealed bases of these feathers are white on both webs, that color giving way to blackish on the outer webs almost at once, but pervading the inner webs for at least half the length of each quill; the shafts are black. The secondaries are more definitely ashy blue than the primaries, that color appearing on both webs, but white encroaches on the inner webs almost to the exclusion of the ashy blue and each feather has a broad subterminal band of blackish brown and is narrowly tipped with white. The rest of the wing, from above, is concolor with the back. White plumules show at the bend of the closed wing.

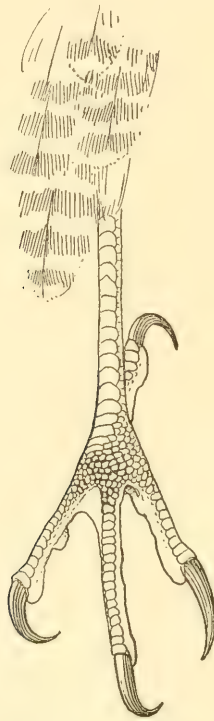
Lower parts: The chin and throat ashy blue, lighter in shade than is that color on the head; the breast ashy blue, evenly barred with white; this ends abruptly on the chest, where the feathers are barred evenly deep cinnamon and white, there being six to seven cinnamon bars crossing each feather; this pattern and color pervades the rest of the lower parts, the

thighs, feathered portion of the legs, and the under tail-coverts; the axillaries are much the same in marking, but the cinnamon bars are somewhat shaded with ashy blue; this is also true of the cinnamon barring on the sides beneath the wing; the lower wing-coverts are white.

Bill: Dark horn-brown, with blue undertone; dull greenish blue.

Iris: Pale lemon-yellow.

FIG. 297.



Circus cinereus. Adult male. P. U. O. C. 7904. Detail of foot from front.

Feet: Bright orange yellow.

Adult male (the first breeding plumage).—P. U. O. C. 8310. Rio Chico de Santa Cruz, Patagonia, 15 March, 1898. A. E. Colburn, collect. Or. No. 306. Resembles the full adult described.

Head: Forehead and lores white. Crown deep seal-brown, suffused with slaty or smoke color and with cinnamon tints showing through.

Eyebrow and face below the eye whitish; ear-coverts slaty blue, but somewhat shaded with brown; facial ruff slaty blue.

Neck: Above and on the sides slaty blue, but shaded with brown. The chin slaty blue, the center of each feather darker, giving a streaked appearance here. Lower neck and breast barred more or less definitely slate and white, but with a strong infusion of cinnamon in the slaty bars; these bars become definitely cinnamon on the lower breast.

Back: Deep slaty brown on upper back; each feather of the lower back and rump edged with pale cinnamon or rufous; the upper tail-coverts pure white, with arrow-shaped subterminal markings of dull cinnamon brown.

Tail: From above when closed, clear slaty blue, with six narrow bars, and a subterminal band of dull brownish black, much suffused by the frosting of slaty which prevails and ashy white tips terminating each feather; when spread, all but the two central rectrices are largely white, except on outer webs, and even here the lighter color is introduced somewhat on the second pair of rectrices and in increasing amount till on the outer pair there is little of the slaty blue terminally on the outer web. Each feather is barred with five sharply defined bars and has a broad, subterminal, dusky band, and a white tip. As the outer rectrices are reached, a strong cinnamon tint is developed, especially in the bars nearest the base of each feather and a cinnamon tone pervades the white areas to some extent; on the outer tail-feather four of the five bars are definitely cinnamon and on the second tail-feather three are the same color, while the subterminal band and the bar next it are not invaded by cinnamon on either of the two outer tail-feathers. From below, the tail is definitely white and the barring strong and distinct, dark, blackish brown, save on the outer feather, which is only notched with obsolete, dull brown. The subterminal band appears as a bar only a little wider than the others, when seen from below.

The wings are like those described, save that the upper coverts are all strongly margined narrowly with dirty white and now and then cinnamon invades these marginal markings to the exclusion of the lighter shade.

While, on the whole, this phase looks at a glance very like the mature adult male, the differences are constant and distinguish this age of the bird at once. It appears to be the first breeding plumage of the adult male and probably only obtains for one season.

Brown phases of plumage.—Adult female (cited above).

General color brown of varying shades, mottled with white and cinnamon and somewhat shaded with slaty above; barred transversely white and brown below.

Head: Forehead and loreal region white; recurved hairs on lores. Crown deep brown, the feathers narrowly edged with dirty white and with tinges of cinnamon. A supraciliary stripe of dirty white reaching from the white of the forehead to above the ear-coverts; this stripe is marked with fine hairlike dusky lines. Cheeks and ear-coverts deep brown like the crown and much streaked with buffy white and cinnamon. Facial ruff of dark brown feathers, bordered broadly with white, almost pure in tone. Occiput of white feathers, with heavy deep brown terminal markings almost obscuring the main feather-color.

Neck: Above and on the sides, much like the occiput in color and marking; the chin and upper throat buffy or dirty white, obscured by narrow, brown streaks; feathers of the lower throat brown of a chocolate shade, mottled and spotted with white.

Back: Deep brown, many of the feathers edged with buffy white and cinnamon, this character becoming more pronounced toward the rump; the upper tail-coverts white and in most individuals each feather has a small but distinct bright cinnamon spot near its tip, while the lateral ones are crossed by pale cinnamon bars.

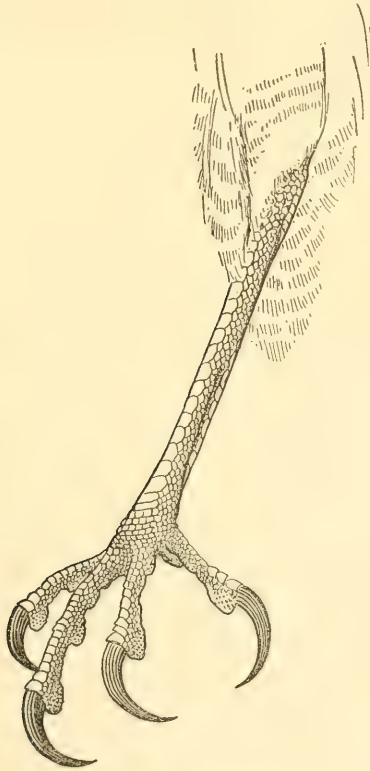
Tail: When closed, from above, slaty blue, crossed by from five to seven narrow bars, and a broad subterminal band, all deep brown, each rectrix being tipped narrowly with white. When spread, the tail is almost like that of the immature male in blue plumage (p. 593) while seen from beneath, it is very similar to the above described phase of plumage.

Wings: The greater coverts slaty blue, broadly barred with deep brown; median and lesser coverts deep brown, with pale cinnamon or buffy white edges and spots, the whole having a mottled look, except on the shoulders, where the deep brown feathers are faintly edged with cinnamon; the scapulars are deep brown, barred with ashy grey and pale cinnamon; all the quills slaty blue, broadly barred with deep brown and with the subterminal bar very broad and narrowly edged with white; this edging is wider and more distinct on the secondaries. Seen from below, the quills appear white, with narrower deep brown bars and a broad subterminal bar; the inner webs are shaded with pale cinnamon or buffy.

Lower parts: The chin and upper throat whitish, with a mid-streak of

deep brown on each feather; lower throat, breast, and chest dull chocolate-brown, ocellated and splotched with white on each feather, the whole having a mottled appearance; remainder of underparts, including the thighs, legs, under tail- and under wing-coverts, as well as the axillaries, barred regularly cinnamon-brown and white; the shade of cinnamon is brightest on the abdomen, lower tail-coverts and thighs, and becomes deep and rich in tone on the sides of the body and under wing-coverts and axillaries.

FIG. 298.



Circus cinereus. Adult female. P. U. O. C. 7905. Detail of foot from side. Natural size.

Bill: Bluish horn-color. Cere dull yellow-green.

Iris: Hazel-brown.

Feet: Orange-yellow. Claws shining black.

First breeding plumage of female.—P. U. O. C. 7950. Rio Chico de Santa Cruz, Patagonia, 15 March, 1898. A. E. Colburn. Or. No. 204.

Head: Forehead and lores whitish. Crown deep brown, broadly edged with bright cinnamon. A dull, fulvous supraciliary stripe from the whitish forehead to the ear-coverts; the ear-coverts streaked dull brown, cinnamon and light fulvous; facial ruff light fulvous, almost white, streaked with mid-markings of dark, blackish brown on each feather; occiput much like crown, with a prevailing cinnamon tone.

Back: Deep seal-brown, most of the feathers edged narrowly with bright cinnamon, which color becomes conspicuous on the feathers of the lower back and rump; upper tail-coverts white, some immaculate, and others with faint subterminal cinnamon markings, generally arrow-shaped.

Tail: Like that of the adult female described (p. 596).

Wings: The pattern as described in the adult female (p. 596) but all the coverts, except the scapulars, with heavy cinnamon edgings and markings; the quills much as in the adult female but the slaty blue prevailing chiefly on the primaries, ashy barring on a deep brown ground characterizing the secondaries; below, the wings are more narrowly barred with deep brown than in the adult and the cinnamon wash is strong on the inner web of all the quills, except the first primary, and here it only occupies the region near the base of the feather.

Lower parts: The chin dirty white, with hair lines of deep brown, or black, each feather of the throat proper deep brown, with a broad edging of fulvous white, giving the whole a streaked look; the breast and chest broadly barred and marked with chocolate-brown, and white much shaded into cinnamon, the whole appearing mottled and suffused; the rest of the under parts, including the legs, thighs, under tail-coverts, under wing-coverts and axillaries are patterned much as in the adult (p. 597), but all the bars are more imperfect and the clear white is everywhere suffused with a strong cinnamon wash, while the barring on the sides is very strong and broad and the cinnamon markings on the under wing-coverts are often arrow-shaped or tear-shaped in the white ground of the feathers. *Birds in this phase of plumage are not streaked, but barred, on the lower parts, where that pattern prevails in the fully adult female.*

Feet, iris and bill as in the adult.

Immature birds; young of the year.—Male.—P. U. O. C. 7951. Rio Chico de Santa Cruz, Patagonia, 8 March, 1898. A. E. Colburn, collector. Or. No. 293.

Female.—P. U. O. C. 8311. Rio Chico de Santa Cruz, Patagonia, 15 March, 1898. A. E. Colburn, collector. Or. No. 307.

Size.—Like that of adults; the female larger than the male.

Color.

FIG. 299.



Circus cinereus. Female, immature. P. U. O. C. 8311. About one-fourth natural size.

General color: Varying shades of brown throughout.

Head: Forehead narrowly white; region in front of eye whitish and with many recurved blackish hairs. Crown deep brown, the feathers bordered and edged narrowly with bright cinnamon. A well defined broad supraciliary stripe of fulvous white, reaching back from the forehead to the region above the ear-coverts, defines the crown; the region below the eye colored like the supraciliary streak, almost reaching it in front and separated from it behind the eye by a broad postocular region of dark brown; cheeks and ear-coverts like the postocular region deep brown in color, but with some streaking of cinnamon; facial ruff fulvous like the

lighter markings about the face and each feather streaked broadly with deep brown. The lighter color of the head varies in different individuals from decided fulvous to nearly pure white and the brown areas vary in the amount of cinnamon relieving them.

Neck: Above and below deep brown, each feather broadly edged with cinnamon, *but not tipped with that color*, the whole having a streaked or striped appearance.

Back: Mantle and lower back, as well as rump, deep brown, the feathers narrowly tipped with bright cinnamon or pale fulvous; this is most apparent on the rump; the upper tail-coverts vary from immaculate white in some individuals to white heavily barred and marked with dull cinnamon in others; but *the white patch is always conspicuous*.

Tail: Tail cinnamon or fulvous, except the two central rectrices, which are slaty ash-blue, much as in the adults in the first breeding dress; the two central rectrices are crossed by five blackish brown bars and have a broad subterminal band of the same color, being finally tipped with whitish or fulvous; the rest of the rectrices have the cinnamon or fulvous ground-color, crossed by four dark brown or blackish bars, and by a broad subterminal band, all having whitish or fulvous tips. Seen from below, the tail presents a more ashy appearance, the fulvous or cinnamon shade being obscured.

Wings: All the quills dark brown, tipped with fulvous or dirty white; the primaries are shaded above on their outer webs with ashy slate, are barred on both webs with deep brown, and, when seen from below, this feature is most conspicuous, the inner webs being light in color and shading into fulvous or pale cinnamon; all the upper wing-coverts are deep rich brown, tipped broadly with bright cinnamon, or duller shades of that color.

Lower parts: Buffy cinnamon throughout, including the under tail-coverts, the under wing-coverts and axillaries; this ground-color is streaked with dark brown on the neck, chest, breast, sides and abdomen, the effect of the bird, seen from below, or in front, *being striped and not barred*; the cinnamon ground on the under tail-coverts and legs is barred broadly with a shade of cinnamon-brown; deep brown prevails on the axillaries, barred with cinnamon; the under wing-coverts are barred with dull brown on a cinnamon ground, the whole having a mottled appearance and being much like the same region in the birds in the first breeding plumage.

Bill: Dull horn-blue; cere dull greenish.

Feet bright orange; claws black.

Iris brown.

Geographical Range.—South America from southern Brazil on the Atlantic Coast to Peru on the Pacific, thence south to the Straits of Magellan; Tierra del Fuego; the Falkland Islands.

The fine series of this harrier procured by the naturalists of the Princeton Expedition throws much light on the phases of plumage through which the birds pass. While not a very abundant bird, it seems to be a widely distributed species and appears to have no great migratory movement, being present throughout the year in the particular regions it affects. These are the more open country, where it ranges the ground much as do the harriers of Europe and North America. The birds breed on the ground on beds of dry grass, without much attempt at nest building; the eggs are pale bluish white.

Hudson in his *Naturalist in La Plata*, pp. 93-94, says:

"Hawks are the most open, violent and persistent enemies birds have; and it is really wonderful to see how well the persecuted kinds appear to know the power for mischief possessed by different raptorial species, and how exactly the amount of alarm exhibited is in proportion to the extent of the danger to be apprehended. Some raptors never attack birds, others only occasionally; still others prey only on the young and feeble; and, speaking of La Plata district, where I have observed hawks, from the *Milvago chimango*—chiefly a carrion-eater—to the destructive peregrine falcon, there is a very great variety of predatory habits, and all degrees of courage to be found; yet all these raptors are treated differently by species liable to be preyed on, and have just as much respect paid them as their strength and daring entitles them to, and no more. So much discrimination seems almost incredible to those who are not familiar with the manners of wild birds. I do not think it could exist if the fear shown resulted from instinct or inherited habit. There would be no end to the blunders of such an instinct as that; and in regions where hawks are extremely abundant most of the birds would be in a constant state of trepidation. On the pampas the appearance of the comparatively harmless chimango excites not the least alarm among small birds, yet at a distance it closely resembles a hen-harrier, and it also readily attacks young, sick, and wounded birds; all others know how little they have to fear from

it. When it appears unexpectedly, sweeping over a hedge or grove with a rapid flight, it is sometimes mistaken for a more dangerous species; there is then a little flutter of alarm, some birds springing into the air, but in two or three seconds of time they discover their mistake, and settle down quietly again, taking no further notice of the despised carrion-eater. On the other hand, I have frequently mistaken a harrier (*Circus cinereus*, in the brown state of plumage) for a chimango, and have only discovered my mistake by seeing the commotion among the small birds. The harrier I have mentioned, also the *C. macropterus*, feed partly on small birds, which they flush from the ground and strike down with their claws. When the harrier appears moving along with a loitering flight near the surface, it is everywhere attended by a little whirlwind of alarm, small birds screaming or chirping excitedly and diving into the grass or bushes; but the alarm does not spread far, and subsides as soon as the hawk has passed on its way. Buzzards (*Buteo* and *Urubitinga*) are much more feared, and create a more widespread alarm, and they are certainly more destructive to birds than harriers."

CIRCUS BUFFONI (Gmel.).

Falco buffoni, Gmelin. Syst. Nat. i. p. 277, 1788 (Cayenne).

Alilargo, Azara, Apunt. I. p. 136 (1802).

Gavilan de estero chorreado, Azara, t. c. p. 74.

Aquila maculosa, Vieill. Ois. l'Amér. sept. pl. 3 bis. (1807).

Circus macropterus, Vieill. N. Dict. d'Hist. Nat. IV. p. 458 (1816: ex Azara, p. 136); Hartl. Ind. Azara, p. 3 (1847); Schl. Mus. Pays Bas, II. Circi, p. 8 (1862: Patagonia); Scl. & Salv. Ibis, 1868, p. 183 (Sandy Point); iid. P. Z. S. 1868, p. 143 (Conchitas); Phil. & Sandb. Cat. Av. Chil. p. 6 (1868); Cunningh. Nat. Hist. Str. Magell. pp. 53, 214 (1871); Scl. & Salv. Nomencl. Av. Neotr. p. 118 (1873); Doering, Expl. al Rio Negro, Zool. p. 50 (1882: Rio Colorado); Gurney, List Diurn. B. Prey, p. 20 (1884); Aplin, 1894, Ibis, 1894, p. 194 (Uruguay).

Circus albicollis, Vieill. N. Dict. d'Hist. Nat. IV. p. 456 (1816: ex Azara, p. 74); Hartl. Ind. Azara, p. 1 (1847).

Circus leucophrys, Vieill. t. c. p. 454.

Morphnus maculosus, Cuv. Règn. Anim. I. p. 319 (1817).

Falco palustris, Temm. Pl. Col. I. p. 22 (1824).

- Circus palustris*, Less. Man. d'Orn. I. p. 105 (1828).
Circus superciliosus, Less. Traité d'Orn. p. 87, pl. 3, fig. 1 (1831).
Buteo macropterus, D'Orb. Voy. Amer. Mérid. p. 112 (1835).
Harpyia maculosa, Swains. Classif. B. II. p. 208 (1837).
Circus megaspilus, Gould, P. Z. S. 1837, p. 10 (Maldonado); Darw. Voy. Beagle, Birds, p. 29 (1841: La Plata, July); Pelz. Reis. Novara, Vög. p. 14 (1865: Chili).
Spizacircus macropterus, Kaup, Mus. Senckenb. III. p. 258 (1845).
Circus maculosus, Strickl. Orn. Syn. p. 155 (1855); Sharpe, Cat. B. Brit. Mus. I. p. 62 (1874); Gurney, List Diurn. B. Prey, p. 20 (1884); Sharpe, Hand-list B. I. p. 245 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Punta Arenas); Albert, Contr. Estud. Aves Chil. II. p. 507 (1901).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 21.00 inches.

Wing, 17.00 inches.

Culmen, 1.40 inches.

Tail, 9.9 inches.

Tarsus, 3.2 inches.

Color.—Adult.

General color: Above, blackish, with a slaty blue shading; below, white, with some darker streaks and spots on the chest and flanks, as well as on the axillaries.

Head: Forehead and a connecting supraciliary stripe white, as is the forepart of the cheeks; crown and sides of the face black, with a bluish gloss or shade; the facial ruff the same shade, slightly spotted with pure white.

Neck: Above, like the head and back; the throat and foreneck and the chin white or whitish; the ruff below plainly varied with white.

Back: Mantle black and, like the crown, somewhat shaded with a blue gloss; lower back and rump uniform black; upper tail-coverts white, often showing traces of cinnamon or rufous cross-bars.

Tail: Two central rectrices ashy, crossed by five blackish bars and with a broader subterminal band of like color tipped with dull whitish; the rest of the rectrices ashy on the outer and whitish on the inner webs and

barred, banded and tipped much like the central pair; the black bars on the outer pair of rectrices shade distinctly with cinnamon, or bright rufous; the tail appears much lighter, seen from below, as the black bars are suffused on the lower surface with white, or silver.

Wings: Upper coverts, including the primary coverts, bluish ash or grey, with blackish brown banding; the quills bluish grey, banded with deep brown; the primaries shading into sepia toward the tips and banded with deep brown; the secondaries much like the primaries, except that the inner series are black in tone and shaded like the upper back; seen from below, the wings appear ashy, deep grey in tone, the inner webs of the primaries being shaded with cinnamon near their bases.

Lower parts: Chin white; throat and foreneck black or blackish; the rest of the under surface white, chiefly immaculate, but with a few black streaks on the breast, the flanks barred with rufous brown, the abdomen, vent and thighs almost immaculate, the under tail-coverts with a few dull rufous bars, the under wing-coverts and axillaries white, with an even barring of dull blackish in both regions.

Bill dark horn-brown, almost black; cere bluish.

Feet lemon-yellow.

Iris pale yellow.

Immature birds; young of the year.—Head: Forehead, a supraciliary streak, region in front of eye and fore part of cheeks dirty white; crown deep brown, with tawny rufous or cinnamon edges to the feathers; ear-coverts deep brown; facial dull fulvous, somewhat streaked with dark brown.

Neck: Nape and sides deep brown, varied with lighter buffy markings; throat and chin whitish; lower neck dark brown, each feather margined with fulvous.

Back: Mantle, lower back and rump deep dark brown, each feather with tawny rufous or bright cinnamon tips; this is most apparent on the rump; the upper tail-coverts white, pure in tone and barred with dark brown or cinnamon brown.

Tail: Ashy grey, with four bars and a subterminal broader band of blackish brown, each rectrix tipped with dull white or fulvous.

Wings: All the upper wing-coverts, including the primary series, deep brown, like the back, and with tawny rufous or bright cinnamon tips to the feathers; the quills all ashy grey, becoming dark brown toward the tips

and barred with blackish brown; the inner secondaries are like the back in color; the tips of all the quills narrowly fulvous.

Lower parts: Chin and throat as described; the body and sides dark brown, each feather with a narrow, definite, fulvous, or pale cinnamon edge, the whole having a striped appearance; the thighs, feathered part of the legs and under tail-coverts bright chestnut or cinnamon, the tail-coverts spotted with dull buff.

Bill: Dark brown horn; cere dull bluish green.

Feet: Bright yellow.

Iris brown.

Geographical Range.—All eastern South America, from the coast to the Cordillera, and from Venezuela to the Straits of Magellan; probably the northern parts of Tierra del Fuego.

This harrier was not obtained or observed by the naturalists of the Princeton Expeditions. It appears to be much less common than *Circus cinereus*, and but little has been written as to its habits. These do not vary greatly from those of its congener, according to Hudson and other field workers who have become acquainted with the bird.

Genus ACCIPITER Brisson.

Type.

Accipiter, Briss. Orn. i. p. 310 (1760); Sharpe, Cat. Bds.

Brit. Mus. i. p. 130 (1874); Sharpe, Hand-list Bds. i.

p. 252 (1899) *A. nisus*.

Nisus, Cuv. Leçons Anat. Comp. i. tabl. Ois. (1799). . . *A. nisus*.

Ierax, Leach, Syst. Cat. Mamm. &c. Brit. Mus. p. 10 (1816). *A. nisus*.

Hieraspiza, Kaup, Class. Säug. u. Vög. p. 116 (1844) . . *A. virgatus*.

Cooperastur, Bp. Rev. et Mag. de Zool. 1854, p. 538 . . *A. nisus*.

Teraspiza, Kaup, P. Z. S. 1867, p. 171 *A. virgatus*.

Geographical Range.—World-wide, but absent from Oceania, west Australia and New Guinea.

ACCIPITER CHILENSIS Philippi & Landbach.

Accipiter chilensis, Phil. & Landb. Arch. für. Naturg. 1864, p. 43; Scl. P.

Z. S. 1867, p. 329; id. & Salv. Exot. Orn. pp. 73, 170, pl. xxxvii (1867); iid. Ibis, 1868, p. 188 (Sandy Point, Feb.); Phil. & Landb.

Cat. Av. Chil. p. 5 (1868); Scl. & Salv. Nomencl. Av. Neotr. p. 120 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 155 (1874: Straits

of Magellan); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 21, 324 (1891: Punta Arenas, Feb.; Orange Bay, June; Sandy Point, Feb.); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo); Lane, Ibis, 1897, p. 180 (Maquequa); Sharpe, Hand-list B. I. p. 254 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Straits of Magellan); Salvad. Ann. Mus. Genov. (2), xx. p. 614 (1900: Penguin Rookery, Feb.; Punta Arenas, May).

Accipiter cooperi, (Pelz. (nec Bp.), Reise Novara, Vög. p. 13 (1865: Chili).
Nisus chilensis, Giebel, Thes. Orn. 2, p. 706 (1872).

Cooperastur chilensis, Gurney, Ibis, 1875, p. 469; id. List Diurn. B. Prey, p. 144 (1884).

FIG. 300.

*Accipiter chilensis*. Profile of head. Natural size.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 16.00 inches.

Wing, 8.50 inches.

Culmen (including cere), 1.25 inches.

Tail, 7.90 inches.

Tarsus, 2.50 inches.

The adult female is noticeably larger than the adult male; length, 18.00 inches; wing, 10.00 inches; tail, 8.25 inches; tarsus, 3.90 inches.

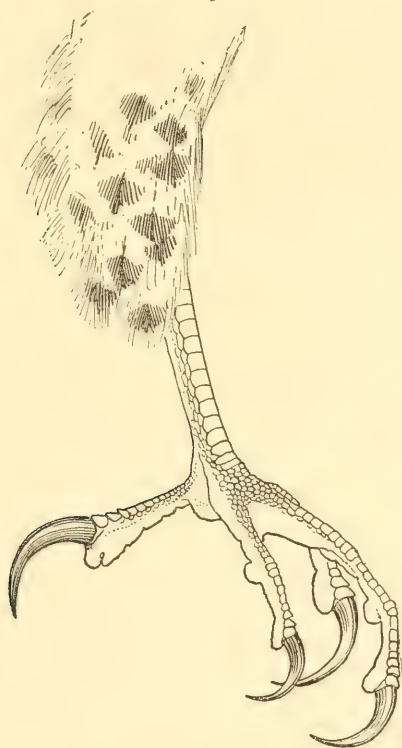
Color.—*Adult male*.—The sexes are alike in color.

Head: Dull brownish slate, shaded heavily with blackish on the crown; sides of the face and ear-coverts much lighter ashy grey.

Neck: The nape and sides clear ashy slate with a brownish tinge; chin and throat whitish, the throat streaked and mottled with dull ashy-brown markings.

Back: Dull, ashy slate, darker than the neck and lighter than the crown, shaded with brownish; rump and upper tail-coverts like the upper back, but somewhat lighter in tone.

FIG. 301.



Accipiter chilensis. Detail of foot. Natural size.

Tail: Brownish ash, each rectrix crossed with six almost black bars and with narrow whitish tips; the tail from below presents a silvery-white surface, somewhat shaded with ashy, and with the black bars very distinct and contrasted on the ground color.

Wings: The upper wing-coverts, including the primary series, concolor with the back; all the quills brownish, with but slight ashy shading, and barred definitely with much darker brown; seen from beneath, the wings

are ashy white, much like the under tail surface, and barred blackish brown, in strong contrast to the white interspaces.

Lower parts: Chin, throat and lower neck as described; the rest of the under surface dull grey, with large white spots, margined generally with brownish edges and forming bars on some of the feathers; the breast is often shaded with rufous; the abdomen is distinctly banded with that shade; the thighs and feathered parts of the legs are tawny rufous or bright cinnamon; under tail-coverts immaculate white; under wing-coverts rufous, mottled with darker brown spots; axillaries barred white and rufous, and with brown edges like the feathers of the breast. There are no field notes that record the color of the eyes, feet and bill.

FIG. 302.



Accipiter chilensis. Immature. One-fourth natural size.

Immature plumage.—Head: Forehead, region in front of eye and a rather ill-defined eye-stripe dirty whitish; crown blackish brown, each feather margined with rufous; white bases of the occipital feathers conspicuous; ear-coverts and sides of face whitish, streaked heavily with dark brown.

Neck: Nape nearly white, streaked with deep brown, the whole shading into fulvous on the hind neck; throat and chin white; lower neck creamy, each feather streaked with deep brown.

Back: Deep brown, most of the feathers with narrow margins of rufous, least distinct on the upper back, but conspicuous on the upper tail-coverts.

Tail: Dull ash-brown, each feather tipped with ashy white and crossed by six bars, somewhat obsolete on the upper surface, but very definite and strongly contrasted on the ashy white of the under surface.

Wings: The upper wing-coverts like the back, dull deep brown, with rufous margins and edges; the quills brown, barred with blackish brown; the secondaries tipped with whitish and with concealed white spots; the wing from beneath shows the barring very distinctly, relieved by the ashy white interspaces.

Lower parts: Throat and chin as described; the remainder of the lower surface creamy buff, with broad oval streaks, or spots, of deep brown on each feather, the whole having a striped appearance; this marking is accentuated on the sides; the thighs and feathered portion of the legs bright rufous, barred and spotted with deep brown; under wing-coverts deep buff, barred with dark brown; axillaries dirty whitish, with rufous barring.

There is no available record of the color of the naked parts, or eyes from freshly killed birds.

Geographical Range.—Chili, ranging south to the Straits of Magellan, Orange Bay, Punta Arenas and Penguin Rookery; southern Patagonia.

This appears to be an uncommon bird of prey in the regions visited by the naturalists of the Princeton Expeditions; they did not meet with the bird. There are numerous records of the hawk in the Straits region and in the foothills of the Cordillera in Chili. It is a bird that preys chiefly on smaller birds and rarely on mice or the larger insects. It is the prototype of *Accipiter nisus* in Europe and of *Accipiter velox* (= *A. fuscus*) in North America and is like these birds in its general economy and habits. The breeding habits of the species are but little known and there are no eggs in the collections of the British Museum.

Subfamily BUTEONINÆ.

Sharpe, Cat. Bds. Brit. Mus. i. p. 158 (1874); Sharpe, Hand-list Bds. i. p. 254 (1899).

Genus HETEROSPIZIAS Sharpe.

Type.

- Heterospizias*, Sharpe, Cat. Bds. Brit. Mus. i. p. 160 (1874); Hand-list Birds, i. p. 254 (1899) . . . *H. meridionalis*.
Spizigeranus, Gray, Hand-list Bds. i. p. 9 (1869, nec Kaup) *H. meridionalis*.
Spizogeranus, Agassiz (1844) = *Spizigeranus*.
Hypomorphnus, Cabanis (1844) *H. meridionalis*.
Geographical Range.—Northern and central portions of South America; casual in northern Patagonia (C. Burmeister).

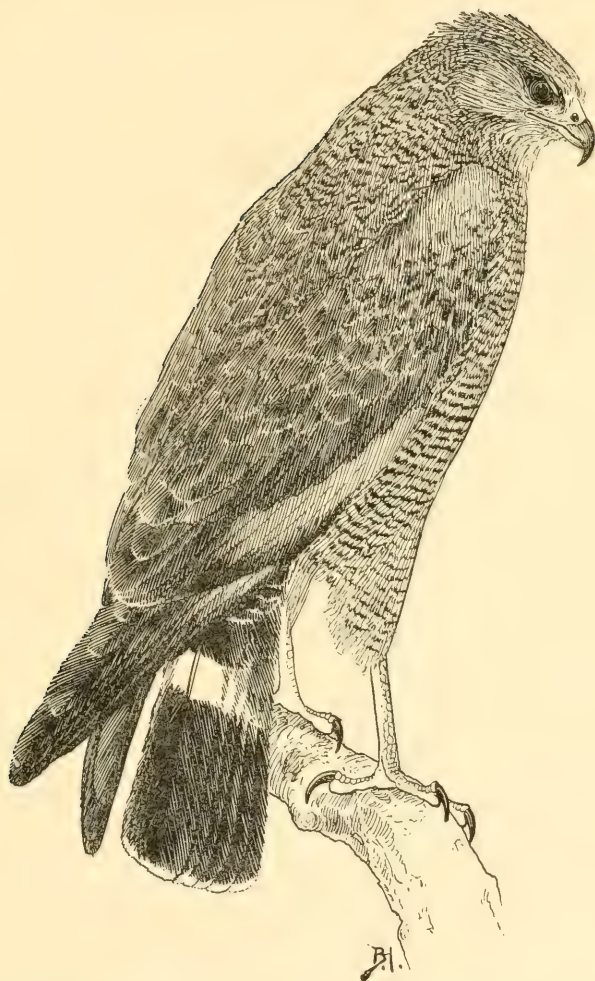
HETEROSPIZIAS MERIDIONALIS (Latham).

- Rufous-headed Falcon, Lath. Gen. Syn. Suppl. p. 33 (1787).
Falco meridionalis, Lath. Ind. Orn. I. p. 36 (1790).
 Gavilan de estero acanelado, Azara, Apunt. I. p. 72 (1802).
Circus rufulus, Vieill. N. Dict. d'Hist. Nat. IV. p. 466 (1816).
Falco rutilans, Licht. Verz. Doubl. p. 60 (1823); Temm. Pl. Col. I. pl. 25 (1824).
Aquila buzon, Spix. Av. Bras. I. p. 6 (1824).
Circus rutilans, Stephens in Shaw's Gen. Zool. XIII. part ii., p. 43 (1825).
Buteo rutilans, Less., Man. d'Orn. I. p. 104 (1828); Hartl. Ind. Azara, p. 1 (1847).
Hypomorphnus rutilans, Cab. Arch. für. Naturg. 1844, p. 264.
Rupornis meridionalis, Kaup, Contr. Orn. 1850, p. 68.
Astur rufulus, Strickl. Orn. Syn. p. 422 (1855).
Buteogallus meridionalis, Scl. P. Z. S. 1860, p. 288.
Asturina rutilans, Burm. La Plata Reise II. p. 436 (1862: Tucuman); C. Burm. An. Mus. Nac. Buenos Aires, III. part XI. p. 316 (1890: Rio Chico del Chubut, Patagonia).
Buteo meridionalis, Schl. Mus. Pays. Bas. II., Buteones, p. 17 (1862).
Urubitinga meridionalis, Scl. & Salv. P. Z. S. 1867, p. 589, 1869, p. 252, p. 634 (Buenos Aires); iid. Nomencl. Av. Neotr. p. 119 (1873); Durnf. Ibis, 1880, p. 362 (Salta).
Heterospizias meridionalis, Sharpe, Cat. B. Brit. Mus. I. p. 160 (1874); Barrows, Auk, I. p. 109 (1884: Entrerios); Scl. & Huds. Argent. Orn. II. p. 63 (1899); Sharpe, Hand-list B. I. p. 254 (1899).

GENERAL DESCRIPTION.

Size.—Adult male.

FIG. 303.



Heterospizias meridionalis. Adult. About one-third natural size.

Total length, about 21.00 inches.

Wing, 16.5 inches.

Culmen, 1.5 inches.

Tail, 8.2 inches.

Tarsus, 4.2 inches.

Color.—Adult male.

Head: Rufous, shading into whitish on the lores; and into ashy grey on the sides of the face and the ear-coverts.

Neck: Rufous, shaded on the throat with ashy; the upper neck shading into the color of the interscapular region, and the lower or under neck into the breast color.

Back: Interscapular region pale, slaty grey, each feather margined and tipped with rufous; lower back, rump and upper tail-coverts blackish; the upper tail-coverts glossed with deep purple and tipped with white.

Tail: Dull blackish, washed with purple, mottled and suffused with rufous at the base, with a broad white band across the middle of the tail and a much narrower terminal band of pure white.

Wings: Scapulars pale, slaty lead-color, or greyish, each feather margined with rufous; lesser wing-coverts bright rufous; the rest of the coverts slaty lead, with broad rufous tips, the median series margined beside with the same color; the quills rufous; the primaries becoming black toward their extremities, and the secondaries with a conspicuous subterminal band or bar of purplish brown, deep in tone; the inner secondaries are wholly this color; under wing-coverts and axillaries uniform bright rufous.

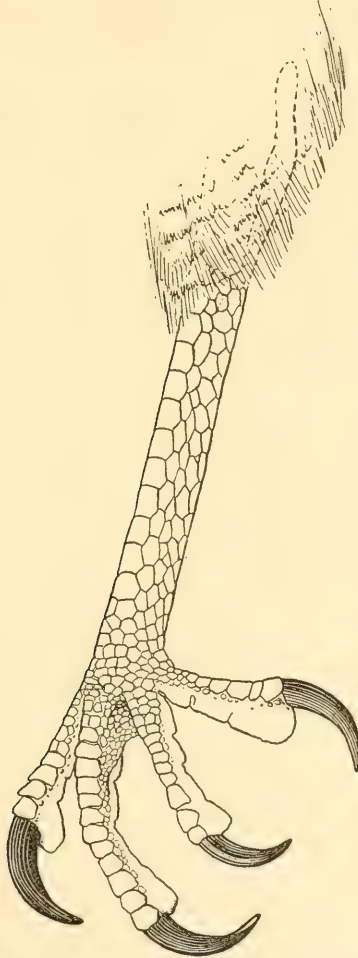
Lower parts: Breast and abdomen, as well as the sides and thighs, rufous, with more or less distinct narrow barring throughout (there is great individual difference in birds, all apparently adult, in this barring; it is almost obsolete in some, showing plainly only upon the breast, while in others it includes, as in the bird from which the black and white drawing was made, clear barring extending even to the thighs, where it is as plain as at any other part; often the thighs are immaculate); the lower tail-coverts generally immaculate bright rufous, but occasionally showing traces of narrow, obsolete blackish bars. There are no field notes as to the color of the bill, the cere, the irides or the legs and feet.

The adult female is like the adult male in appearance, but notably larger; length, about 24.50; wing, 18.40; tail, 10.2 inches, and tarsus, 5.00 inches.

Immature birds and young of the year: Dusky or blackish above; the dark feathers of the crown decorated with notches and bars of deep rufous; the crown defined by a more or less conspicuous supraciliary stripe of

clear bright rufous; the sides of the face and ear-coverts dusk, with some dull rufous shading; the back is blackish, with narrow rufous edging to the feathers; the lesser wing-coverts are bright rufous, much as in the adult, and the rest of the wing is much like the back, but the feathers

FIG. 304.



Heterospizias meridionalis. Details of foot. Female. Natural size.

mottled with dull rufous and edged with a like color; the tail has the general deep brown tone with purplish shading found in the adult; it is in the youngest birds decorated with several obsolete bands of ashy grey, the base being finely mottled with the same shade; the subterminal band is well-defined and the terminal white tips to the feathers are clear. In birds which appear to be older, the first breeding season, but not yet in full plumage, the tail has two or more white bars near the base in addi-

FIG. 305.



Heterospizias meridionalis. Female. Natural size.

tion to the median clear white band and the terminal white margin. There seems to be no intermediate or transitional plumage between this and the adult stage, when the tail is characterized as indicated above. The lower parts are pale rufous, barred with blackish, often concentrated on the breast and chest into a distinct dark area, forming a broad band, but more frequently homogeneous in barring throughout; as already described under the adult, this barring varies much in clearness till the bars almost disappear from the lower surface, except on the breast, in what seem to be the oldest birds.

Geographical Range.—The same as that given for the genus, it being mono-typic.

This species is included in the present account of the bird-fauna of Patagonia chiefly on the record of specimens from the Rio Chico del Chubut, Patagonia, by C. Burmeister. That it is of common occurrence

in northern Argentina there seems to be no question, but our knowledge of its life history is at present meager.

W. B. Barrows says of its occurrence in Uruguay (*Auk*, 1884, pp. 109–110): "Not unfrequently seen at Concepcion in cold weather, and a single one was seen as late as September 29.

FIG. 306.



Heterospizias meridionalis. Immature male. One-third natural size.

"About July 21, 1880, during an almost unprecedented rise of the river, many rather scarce Hawks became quite abundant for a few days, and among them was the present species. A female, taken July 21, appeared so gorged with food that it was easily shot, but an examination

showed that though its crop was crowded to its utmost capacity, it contained nothing but young grasshoppers, not a trace of other food being found in its stomach."

Genus TACHYTRIORCHIS Kaup.

Type.

Tachytriorchis, Kaup, Classif. Säug. u. Vög. p. 123

(1848); Sharpe, Cat. Bds. Brit. Mus. i. p. 161

(1874); Sharpe, Hand-list Bds. i. p. 254 (1899). *T. albicaudatus*.

Geographical Range.—Eastern and central Brazil from the Tropic of Capricorn northwards to Guiana and Colombia, along the western coast of Central America into the southwestern boundary of the United States.

TACHYTRIORCHIS ALBICAUDATUS (Vieillot).

Aquila coliblanca, Azara, Apunt. I. p. 69 (1802).

Buteo albicaudatus, Vieill. N. Dict. d'Hist. IV. p. 477 (1816); Pucher.

Rev. et Mag. Zool. 1857, p. 87; Gurney, Ibis, 1875, p. 67; id. List

Diurn. B. Prey, p. 69 (1884); Scl. & Huds. Argent. Orn. II. p. 61

(1889); Albert, Contr. Estud. Av. Chil. II. p. 519 (1901).

Spizaetus leucurus, Vieill. N. Dict. d'Hist. Nat. xxxii. p. 59 (1819: ex Azara).

Falco pterocles, Temm. Pl. Col. I. pls. 56, 139 (1823).

Buteo pterocles, Less. Man. d'Orn. I. p. 103 (1828); Scl. & Salv. Nomencl.

Av. Neotr. p. 119 (1873); Durnf. Ibis, 1876, p. 161 (Buenos Aires);

Doering, Expl. al Rio Negro, Zool. p. 51 (1882: abundant in the

valley of the Rio Negro about Choelechoel); White, P. Z. S. 1882,

p. 622 (Monte Grande, April); Barrows, Auk, I. p. 109 (1884: Arroyo

Guaileguaychu, April).

Buteo albicauda, Less. Traité d'Orn. p. 81, pl. 15, fig. 2 (1831).

Tachytriorchis pterocles, Kaup. Classif. Säug. u. Vög. p. 123 (1844); id.

Contr. Orn. 1850, p. 75.

Buteo tricolor, Hartl. (nec. d'Orn.) Ind. Azara, p. 1 (1847).

Buteo leucurus, Lafr. Rev. Zool. 1849, p. 100.

Tachytriorchis albicaudatus, Sharpe, Cat. B. Brit. Mus. I. p. 162 (1874); id.

Hand-list B. I. p. 254 (1899).

Buteo melanostethos, Phil. Vög. Chil. Arch. Naturg. 1899, p. 107 (Chili).

Buteo pæcilogaster, Phil. tom. cit. p. 167.

Buteo (*Asturina*?) *æthiops*, Phil. tom. cit. p. 168.

Buteo pteroclis, Carbajal, La Patagonia, Part II. p. 256 (1900).

FIG. 307.



Tachytiorchis albicaudatus. Adult male. Brazil, September. 34,705 American Museum Natural History. About one-fourth natural size.

GENERAL DESCRIPTION:

Size.—Adult male.

Total length, about 21.00 inches.

Wing, 17.00 inches.

Culmen, 1.5 inches.

Tail, 7.6 inches.

Tarsus, 3.6 inches.

Color.—*Adult male*.

Head: Plain bluish grey, slaty or dark slaty; darker in the region about the eye; (this body-color varies in different individuals without regard, apparently, to age, i. e., all birds in this plumage may be regarded as in the final adult phase).

Neck: Throat and back of neck slaty, or grey; the lower under neck white.

Back: Interscapular region and lower back clear slate, or slaty grey; the rump and upper tail-coverts pure white; some of the feathers of the beginning of the white on the rump tinged with rusty.

FIG. 308.



Tachytriorchis albicaudatus. Adult male, cited. Natural size.

Tail: White, with a broad sub-terminal band of black, and a terminal narrow bar of pure white; the part of the tail anterior to the sub-terminal band of black has the white crossed by numerous narrow stripes, or lines of slaty grey, or pale slate color.

Wings: Darker than the back of the same tone and with the anterior lesser coverts rusty, as are often some of the smaller scapulars; less frequently this rusty shade is apparent on the longer scapulars; under wing-coverts white; axillaries white, barred with slaty or grey.

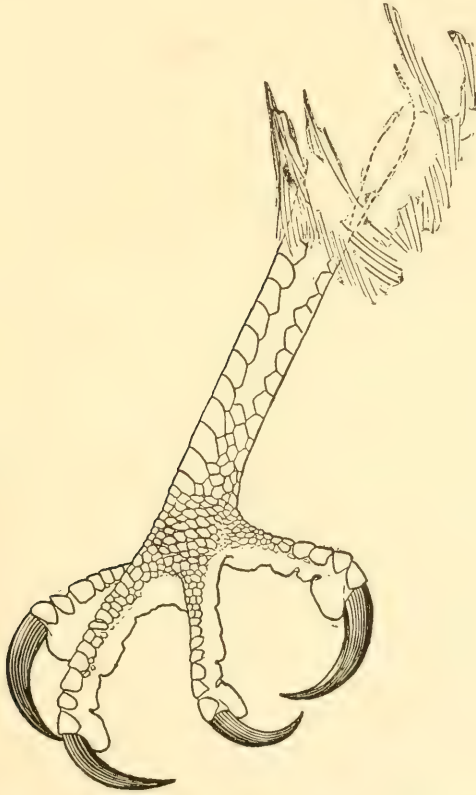
Lower parts: Except the throat, white; immaculate generally save on the flanks, thighs and under tail-coverts, which usually are faintly barred and marked with rusty, ash-grey, or dusky. Field notes on the colors of the bill, cere, feet and legs, as well as that of the irides, are not available.

Adult female.—Similar to the adult male, but with a greater amount of rusty on the shoulder and the general color usually darker and richer; larger than the adult male; length 23.00; wing 17.80; tail 10.25.

Immature birds and young of the year.—*Male; young of the year*.—General color of the plumage deep dusky brown; the head darker, the lores white or whitish, and an indistinct white eyebrow; the feathers of the

shoulders with rusty margins and concealed rusty marks; the tail hoary grey, with a distinct broad terminal band of a much darker shade, blackish or dusky grey, in front of which are sixteen or more narrow bars of dusky

FIG. 309.



Tachytiorchis albicaudatus. Adult male; detail of foot. Natural size.

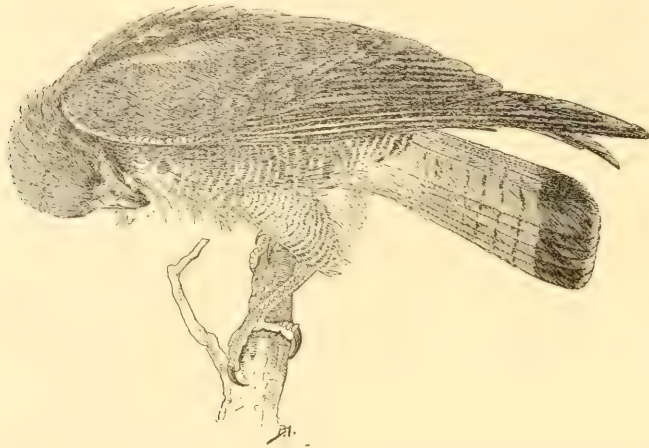
grey; the throat and breast like the upper parts and the remainder of the lower parts inclining to white, or fulvous white with dark markings, arrows, or bars on most of the feathers.

Female; young of the year.—Much like the preceding bird, but with the sub-terminal band on the tail clearly defined, the ground-color and a ter-

minimal bar deep ashy grey, and the region in front of the sub-terminal band crossed by eight or more narrow obscure blackish bars that are almost lines, as in the adult. The rusty color on the shoulders more pronounced than in the young male.

Downy young.—Upper part of the head dark sooty brown, nearly black about the eyes, shading into lighter smoky brown on the neck and back, this becoming lighter toward the region of the tail; on the lower neck and

FIG. 310.



Tachytriorchis albicaudatus. Female of the year. From a bird in the American Museum. One-fourth natural size.

breast the sooty brown fades into buff and this into nearly white on the abdomen. There is a male, apparently perfectly adult, in the collection of the American Museum of Natural History, No. 34, 710, which is figured on p. 622. (Fig. 312.) This bird presents what appears to be a dimorphic phase of plumage. It is dusky or blackish throughout except on the rump, the upper tail-coverts and the region about the vent and lower tail-coverts, all of which are white and in markings much as in the ordinary adult male; the tail is like that of the ordinary male bird, white with a sub-terminal broad black band, a terminal white bar, and the region of pure white in front of the sub-terminal band crossed by narrow lines or bars of dusky.

Geographical Range.—Tropical South America; south to the Rio Negro region of Patagonia; north into Central America and southern Mexico; intergrading thence with the form *sennetti*, which represents the typical *albicaudatus* throughout Mexico, southern Texas and southern Arizona.

Mr. Hatcher and his associates did not penetrate to that part of Patagonia where these birds have been found and the descriptions in the foregoing pages are from the series of birds in the British Museum of Natural History and in the American Museum in New York.

FIG. 311.



Tachytrorhis albicaudatus.. Immature male. From bird in the American Museum.
One-fourth natural size.

The birds, as found in their northern range, nest in low bushes and trees, often in the yucca and sometimes in cacti. But little seems to have been contributed to the life history of this hawk. It is a bird that feeds on smaller mammals and at times on carrion, but rarely on other birds. The eggs are not in the collections of the British Museum and are believed to be undescribed.

FIG. 312.



Tachytiorchis albicaudatus. Male in dark plumage. From a bird in the American Museum.

Genus BUTEO Lacépède.

Type.

- Buteo*, Lacép. Tableaux Ois, p. 4 (1799); Sharpe, Cat.
 Bds. Brit. Mus. i. p. 164 (1874); Sharpe, Hand-
 List Bds. i. p. 255 (1899) *B. buteo*.
Craxirex, Gould, in Darw. Voy. Beagle, Birds, p. 22
 (1841) *B. galapagensis*.
Butaquila, Hodgs, in Gray's Zool. Misc. p. 81 (1844) . *B. ferox*.
Pacilopternis, Kaup, Isis, 1847, p. 329 *B. latissimus*.

Geographical Range.—Found throughout the world except in the Indo-Malayan region and in Australasia and in Oceania.

BUTEO MELANOLEUCUS (Vieillot).

Aquila obscura y blanca, Azara, Apunt. I. p. 61 (1802).

Aquila parda, Azara, tom cit. p. 65.

Spizaetus melanoleucus, Vieill. N. Dict. d'Hist. Nat. xxxii. p. 57 (1819: ex Azara, p. 61).

Spizaetus fuscescens, Vieill. tom cit. p. 55 (ex Azara, p. 65); Hartl. Ind. Azara, p. 1 (1847).

Falco aguia, Temm. Pl. Col. I. pl. 302 (1824).

Haliaetus aguia, Cuv. Règn. Anim. I. p. 327 (1829); Fraser, P. Z. S. 1843, p. 108 (mountainous parts of Chili).

Haliaetus melanoleucus, D'Orbign. Voy. Amér. Mérid. p. 76 (1835: Patagonia); id. & Lafr. Syn. Av. p. 3 (1838); Burm. Reis. La Plata, II. p. 435 (1861: Paraná: Tucuman: Pampas); C. Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Northern Patagonia), part xi, p. 315 (1890: Rio Singeur: Rio Chico del Chubut).

Geranoaetus aguia, Kaup, Classif. Säug. u. Vög. p. 122 (1844); Hartl. Naum. 1853, p. 220.

Buteo aguia, Cab. & Tschudi, Arch. für Nat. 1844, p. 264.

Pontoaetus melanoleucus, Gray, Gen. B. I. p. 18 (1845); Hartl. Ind. Azara, p. 1 (1847); Des Murs in Gay's Hist. Chil. Zool. I. p. 221 (1847); Phil. & Landb. Cat. Av. Chil. p. 4 (1868).

Cuncuma melanoleucus, Gray, Cat. Accipitr. p. 25 (1848).

Heteroaetus aguia, Kaup, Contr. Orn. 1850, p. 74.

Geranoaetus melanoleucus, Strickl. Orn. Syn. p. 55 (1855); Pelz. Reis. Novara, Vög. p. 7 (1865: Chili); Scl. & Salv. Ibis, 1869, p. 284 (Cape Negro, Nov.); Cunningh. Nat. Hist. Str. Magell. p. 269 (1871); Huds. P. Z. S. 1872, pp. 536, 549 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873); Lee, Ibis, 1873, p. 131 (Argent. Rep.); Gurney, Ibis, 1876, p. 66; Durnf. Ibis, 1877, p. 38 (Chupat Valley, breeding in Nov.), 1878, p. 397 (Tambo Point, Dec. nesting); Scl. & Salv. P. Z. S. 1878, p. 434; Gibson, Ibis, 1879, p. 409 (Cape San Antonio, Dec. breeding); Scl. & Salv. Voy. Chall. II. Birds, p. 104 (1880: Elizabeth Isl., Jan.); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: banks of the Rio Negro, breeding); White, P. Z. S. 1882, p. 263 (Campo Colorado, Oran, Salta, Nov.); Gurney, List Diurn. B. Prey, p. 74 (1884); Barrows, Auk, I. p. 110 (1884: Entre-

rios & Ventana, abundant resident); Scl. & Huds. Argent. Orn. II. p. 64 (1889: Patagonia); Ridgw. Proc. U. S. Nat. Mus. XII. p. 136 (1889: Elizabeth Isl.); Frenzel, J. f. O. 1891, p. 114 (Córdoba); Graham Kerr, Ibis, 1892, p. 143 (Lower Pilcomayo); James, New List Chil. B. p. 7 (1892); Aplin, Ibis, 1894, p. 194 (Uruguay); Schallow,

FIG. 313.



Butor melanoleucus. Adult male, P. U. O. C. 8992. About one-fifth natural size.

Zool. Jahrb. Suppl. IV. p. 695 (1898: Ovalle: Cape Espiritu Santo, East Fuegia, Feb.); Sharpe, Hand-list B. I. p. 255 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 614 (1900: Santa Cruz, Jan. and July); Carbajal, La Patagonia, Part II. p. 256 (1900); Albert, Contr. Estud. Av. Chil. II. p. 529 (1901).

Asturina melanoleuca, Schl. Mus. Pays Bas II. Asturinæ, p. 5 (1862: Patagonia).

Buteo melanoleucus, Sharpe, Cat. B. Brit. Mus. I. p. 168 (1874: Rio Negro: Eastern Patagonia); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 35, 324 (1891: Santa Cruz, Sept.: Salinas, Dec.: Delgada Point, June); Gosse in Fitzger. Highest Andes, App. C. p. 343 (1899: Inca, breeding); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Patagonia: Tierra del Fuego).

GENERAL DESCRIPTION.

Size.—Adult male, No. 8992, P. U. O. C.; Chubut, Patagonia, July, 1896. Collector, Museo de La Plata.

Total length, about 28.00 inches.

Wing, 21.0 inches.

Culmen, 2.3 inches.

Tail, 10.5 inches.

Tarsus, 4.2 inches.

FIG. 314.



Buteo melanoleucus. Adult female. One-half natural size.

Color.—Adult male cited.

General color: Above, smoky blue-black; below, ashy on the throat, a broad band of smoky blue-black on the chest and breast, rest of under surface pure white, with faint line-like barring of ashy brown.

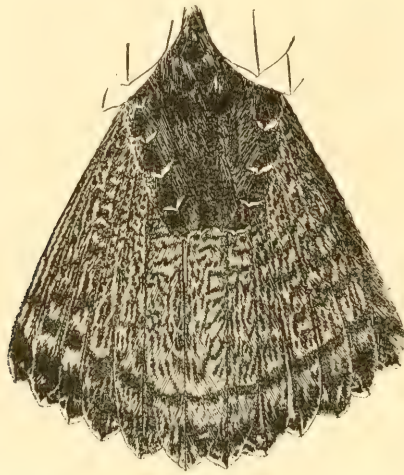
Head: Whole top of head and crown smoky blue-black; the lores and sides of the face ashy, with fine hair-like lines of blackish, and the ear-coverts ashy, shaded with smoky blue-black. The bases of all the feathers

of the crown and top of head cottony white, and the feathers decidedly lanceolate in shape.

Neck: The chin and throat ashy grey, with the shafts of the feathers showing as distinct hair-like lines of black; upper neck smoky blue-black, concolor with the crown and the feathers with the same cottony white bases and more or less pointed tips.

Back: The entire back, including the upper tail-coverts, smoky blue-black; the feathers of the interscapular region barely tipped with white (the remaining signs of immaturity, as most adults are not decorated in this way). The bases of all the feathers, including the upper tail-coverts, cottony white.

FIG. 315.



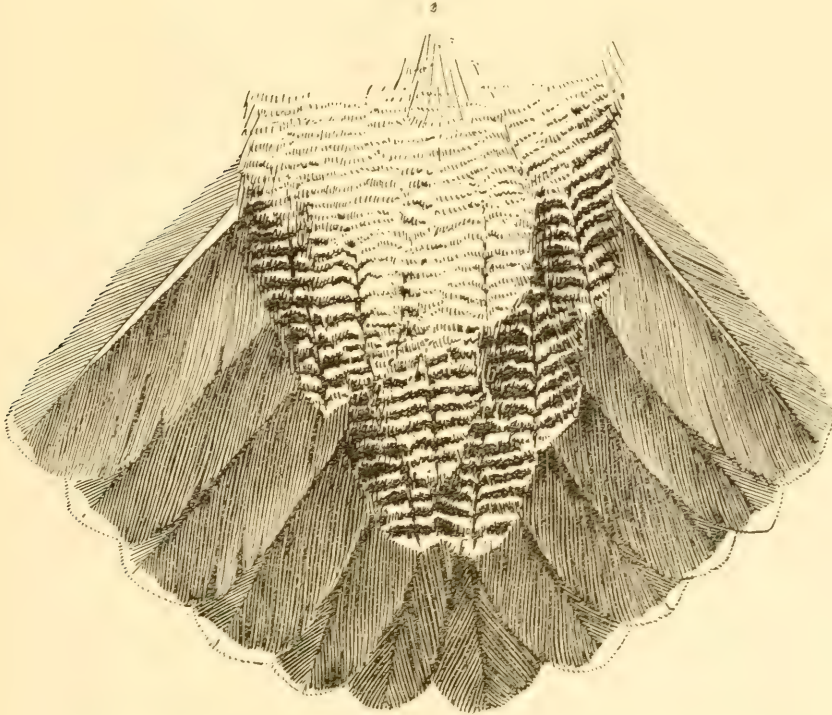
Butco melanoleucus. Tail from above; reduced.

Tail: The upper surface dull black, the feathers narrowly and rather obsoletely tipped with ashy white; the lower surface dull black, with a decided brownish tinge and the light tips to the feathers much plainer and better defined.

Wings: The quills dull black, immaculate at the extremities and shaded and barred on their outer webs with hoary ashy grey, barred, shaded and vermiculated on their inner webs with a deeper shade of blue-grey; on the exposed surfaces of the inner secondaries a shade of dull brown suf-

fuses the barring; scapulars smoky blue-black; all the upper wing-coverts (in this particular individual) barred; the least and median series with ashy brown on a grey or silvery ground; the greater series smoky blue-black with distinct bars of ashy grey and smoky blue-black of about even

FIG. 316.



Buteo melanoleucus. Tail from below. Adult male. About one-half natural size.

width; here as on the inner secondaries there is a brownish wash or tinge on the inner feathers of the series (the greater coverts in some individuals are clear smoky blue-black like the back); under wing-coverts and axillaries white, very silvery in tone and crossed by many narrow ashy brown bars.

Lower parts: Chin and throat ashy grey; a broad, well-defined band of smoky blue-black across the breast and chest terminates abruptly and well

defined on the silvery white of the rest of the under surface, the abdomen, the sides, thighs, flanks, the feathers about the vent and some of the under tail-coverts (in this individual many of the feathers of the breast band are tipped just at the end with silvery white; probably a sign of immaturity, as most birds in this phase lack this decoration); the feathers are long and

FIG. 317.



Buteo melanoleucus. Foot of adult female. One-half natural size.

silky in character and each is crossed by seven or more wavering bars or lines of pale ashy brown; the tail-coverts nearest the body are like the rest of the under surface, but the posterior half of these feathers, which are so long as to reach nearly to the ends of the outer rectrices, are barred heavily and evenly black and white; the thighs are barred like the rest of the under surface with narrow, pale, wavering lines of brownish ash.

There appear to be no detailed field notes as to the color of the bill, cere, iris or feet and legs of this hawk.

Adult female: No. 7885 P. U. O. C., Halliday's Ranch, southeastern Patagonia, 15th June, 1896, J. B. Hatcher.

Similar to the adult male in color, but much larger in every way; the greater coverts smoky blue-black, immaculate; the breast band and interscapular region without the white tips to the points of the dark feathers;

FIG. 318.



Buteo melanoleucus. P. U. O. C. 7886. Immature plumage. One-fifth natural size.

all the smoky blue-black color deeper in tone and richer, nearer to black. Length 32.00; wing 25.0; tail 13.0 inches.

Young of the year and immature birds: No. 7886, P. U. O. C., Coy Inlet, Patagonia (southeastern), 12 November, 1896, J. B. Hatcher. Gen-

eral color reddish brown, cinnamon and white or buff. The feathers of the crown and back of the head white, with their lanceolate tips deep seal-brown, not wholly concealing the underlying color; sides of the face and a more or less distinct line back of the eye buffy white, the former streaked with deep seal-brown; the back and upper surface in general a mixture of deep seal-brown, the feathers edged and marked irregularly with rusty reddish, and on the upper tail-coverts vermiculated on the outer webs with cinnamon-brown; the lesser and median coverts similar to the rest of the upper surface, the greater series seal-brown, with ashy barring on the outer webs and vermiculation of white and buff and ashy grey on the inner webs; the quills much as in the adult; the tail above deep ashy grey, with vermiculation and obscure barring in dull seal-brown; seen from below, the tail is dull seal-brown, heavily marked and vermiculated with ashy white and grey; the breast and throat are strongly cinnamon with heavy deep seal-brown arrow-shaped markings; the abdomen is deep seal-brown, with buffy marks and barring more or less distinct; the thighs are barred about evenly deep seal-brown and bright cinnamon; the under tail-coverts are barred evenly deep seal, pale cinnamon and white; they are relatively shorter than in the adult.

Geographical Range.—Chili, Tierra del Fuego, the whole of Patagonia, and the eastern part of Brazil and northern South America to Colombia.

This is one of the conspicuous birds of the Patagonian region and is commonly known as the eagle; it was noted by the naturalists of Princeton at various points in southern Patagonia, near to and away from the coast, and both the old and immature plumages of the bird are represented in the collections made by Mr. Hatcher. These birds, together with specimens from Chubut, from the Museo de La Plata, form the basis of the present descriptions, to which the series of birds in the British Museum of Natural History have also contributed.

The birds do not appear to be migratory at any point in their range and have been secured at the Straits of Magellan or in the vicinity at all seasons of the year. In the Chupat Valley they breed in November and December. Doering says they breed upon the banks of the Rio Negro upon the ground, but on some elevated place; Barrows thought the birds he became acquainted with bred on cliffs in the hills of northern Argentina, but did not absolutely see the nest.

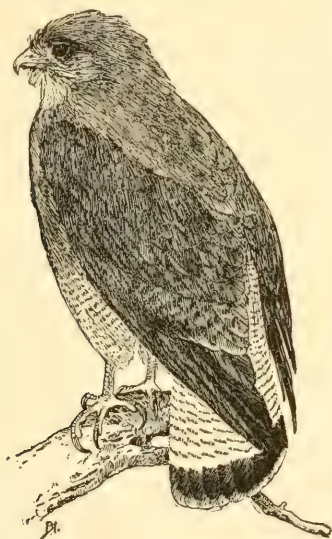
In Uruguay, Aplín refers to it as follows (Ibis, 1894, pp. 194-195):

"Doubtless a resident, as, although I did not actually find it breeding, I was told that eggs were sometimes taken, and I saw examples at all seasons during my residence in the country; they were, however, certainly more numerous at the end of summer and in autumn. The fully adult bird has the upper parts grey, barred indistinctly on the wings and tail with a darker lead-grey; breast grey, with each feather tipped with white; belly pure white."

BUTEO POLIOSOMA (Quoy & Gaimard).

Falco polyosome, Quoy & Gaim. Voy. Uranie, Ois. p. 92, pl. 14 (1824: Falkland Islands).

FIG. 319.



Buteo poliosoma. Adult male. Chili. From bird in American Museum.
About one-fifth natural size.

Buteo polyosoma, Less. Voy. Coq. Zool. I. p. 616 (1826: Falkland Is.);
Des Murs in Gay's Hist. Chil. Zool. I. p. 219 (1847).

Astur polyosoma, Cuv. Règn. Anim. I. p. 332 (1829).

Buteo poliosoma, Abbott, Ibis, 1861, p. 151 (Falkland Islands, breeds in Oct.); Phil. & Landb. Cat. Av. Chil. p. 3 (1868); Scl. & Salv.

Nomencl. Av. Neotr. p. 119 (1873: Falkland Is. and Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 171 (1874: Port Famine, South Patagonia: Falkland Is.), Gurney, Ibis, 1876, p. 69; id. List Diurn. B.

FIG. 320.

*Butco poliosoma.* Adult male. Natural size.

Prey, p. 70 (1884); Burm. Ann. Mus. Nac. Buenos Aires, III. part x, p. 241 (1888: Patagonia: Straits of Magellan; Falkland Is.); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 22, 324 (1891: Orange Bay, June: Beagle Canal, Aug.); Sharpe, Hand-List B. I. p. 255 (1899); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Tierra del Fuego: Falkland Is.).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 22.50 inches.

Wing, 15.5 inches.

Culmen, 1.5 inches.

Tail, 8.0 inches.

Tarsus, 3.5 inches.

Color.—*Adult male*.—General color: Lead-color throughout, except on the tail-coverts and the tail, which are white with dark markings.

Head: Bluish lead-color, lighter than on the back; lores and ear-coverts still lighter, approaching white.

Neck: Bluish lead-color, whitening on the throat and chin.

Back: Interscapular region and lower back darker bluish lead-color; the rump shading to white and the upper tail-coverts pure white; both regions crossed with narrow bars of slaty grey and the rump sometimes mottled with that shade.

Tail: White of the purest tone; crossed by eight or more wavering, narrow, slaty grey bars and by a broad sub-terminal band of slaty blue-black, terminating in a band a third as wide as the last, pure white.

Wings: Primaries blackish, the external exposed surfaces frosted with silvery slate; white at base of inner web, with markings and bars of bluish slate; the secondaries bluish lead-color like the back, and tipped faintly with silvery grey, almost white; all the upper wing-coverts darker bluish lead-color like the interscapular region; lower wing-coverts and axillaries lighter slate.

Lower parts: Bluish lead-color; pale on the throat and chin, darkest on the chest and breast and again light about the abdomen in the region of the vent; the lower tail-coverts white, pure in tone, with some mottlings and many narrow, wavering bars of pale grey slate; the thighs light slate, barred finely with a darker shade.

There appear to be no field notes available to indicate the color of the bill, the cere, the irides, or feet and legs, as they look in life.

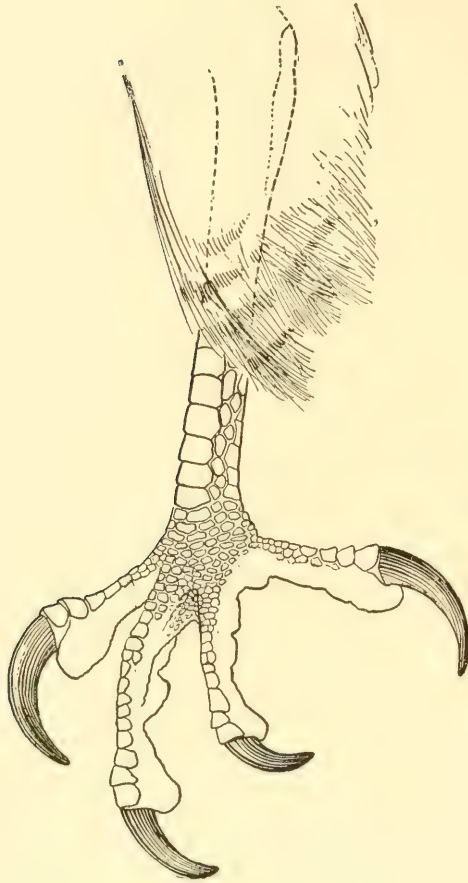
The female adult does not differ from the male in appearance, but is a little larger; length 23.50; wing 17.00; tail 10.00 inches.

No immature birds or young of the year have been available for study and description.

Geographical Range.—Southern Patagonia, the Straits of Magellan region, the whole of Tierra del Fuego and the Falkland Islands.

This is one of the rarer birds of prey even in the region where it occurs and there are but few specimens, probably less than thirty all told, in the great museums of the world, and recent accounts of the life history of this hawk are entirely lacking. It was not encountered by the naturalists sent out by Princeton to Patagonia. That it is a close ally of *Buteo erythronotus* is apparent and it is not impossible that future study may show relationships which will prove the specific identity of the two forms.

FIG. 321.

*Buteo poliosoma.* Foot of adult male. Natural size.

BUTEO ERYTHRONOTUS (King).

Haliaetus erythronotus, King, Zool. Journ. III. p. 424 (1827: Port Famine).*Aquila braccata*, Meyen, Beitr. p. 65 (1834).*Buteo tricolor*, D'Orb. Voy. Amer. Mérid. p. 106, pl. 3, figs. 1, 2 (1835: Rio Negro and coast of Patagonia); id. et Lafr. Syn. Av. p. 6 (1838);
Burm. Reise La Plata, II. p. 436 (1861: Mendoza: Tucuman); C.

- Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 241 (1888: Northern Patagonia), part XI. p. 315 (1890: Rio Chico del Chubut).
Buteo varius, Gould, P. Z. S. 1837, p. 10 (Santa Cruz, Patagonia); Darw. Voy. Beagle, Birds, p. 26 (1841: Straits of Magellan, Feb.; St. Julian, Jan.); Cass. U. S. Expl. Exped. p. 92, pl. 3, fig. 1 (1858: Patagonia); Gould, P. Z. S. 1859, p. 94 (eggs described); Scl. P. Z. S. 1860, p. 384 (Falkland Is.).
Buteo unicolor, D'Orb. et Lafr. Syn. Av. p. 7 (1837).
Buteo erythronotus, Gould, Voy. Beagle, Birds, p. 26 (1841: Chiloe and Falkland Islands); Fraser, P. Z. S. 1843, p. 109 (Chili, in the open parts of the country); Des Murs in Gay's Hist. Chil. Zool. I. p. 215 (1847); Hartl. Naum. 1853, p. 220 (Chili); Gould, P. Z. S. 1859, p. 93 (Falkland Is., eggs described); Scl. P. Z. S. 1860, p. 384; id. Ibis, 1860, p. 25, pl. i, fig. 3 (egg); Abbott, Ibis, 1861, p. 151 (East Falkland Is., Common, breeds in October); Phil. and Landb. Cat. Av. Chil. p. 3 (1868); Scl. and Salv. Ibis, 1868, p. 188 (Sandy Point, Straits of Magellan); iid. Ibis, 1869, p. 284 (Fox Bay, W. Falklands, Jan.); Cunningh. Nat. Hist. Str. Magell. p. p. 187, 299 (1871); Huds. P. Z. S. 1872, p. p. 536, 549 (Rio Negro); Leyb. Excurs. Pamp. Arjent. p. 56 (1873); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 172 (1874: Falkland Is.; Straits of Magellan; Patagonia); Gurney, Ibis, 1876, p. 68; Durnf. Ibis, 1877, p. 38 (Ninfas Point, Chupat Valley, breeds in Nov.), 1878, p. 397, Central Patagonia, resident, breeds in Oct.); Gibson, Ibis, 1879, p. 411 (Cape San Antonio, June); Durnf. Ibis, 1880, p. p. 413, 427 (Tortugas, May); Scl. & Salv. Voy. Chall. II. Birds, p. 150 (1880: Falkland Is., eggs); Doering, Expl. al Rio Negro, Zool. p. 50 (1882: northern Patagonia); Salv. P. Z. S. 1883, p. 426 (Coquimbo); Gurney, List Diurn. B. Prey, p. 69 (1884); Barrows, Auk, I p. 109 (1884: Carline to Azul, April, plentiful); Tacz. Orn. Pérou, I. p. 115 (1884); Phil. Ornith. IV. p. 158 (1886: Cebollar); Withington, Ibis, 1888, p. 469 (Lomas de Zamora, not common, not observed to breed); Scl. & Huds. Argent. Orn. II. p. 62 (1889: Patagonia, abundant); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 28, 324 (1891: Punta Arenas, Feb.); Frenzel, J. p. O. 1891, p. 114 (Córdoba); Scl. P. Z. S. 1891, p. 135 (Tarapaca); Huds. Idle Days in Patag. p. 213 (1893); Aplin. Ibis, 1894, p. 194 (Uruguay); Hol-

land, Ibis, 1895, p. 216 (Argent. Rep., winter); Lane, Ibis, 1897, p. 179 (Cancosa); Schallow, Zool. Jahrb. Suppl. IV. p. 695 (1898: Pampa Tamarugal, Iquique, Aug.); Sharpe, Hand-l. B. I. p. 255 (1899); Salvad. Ann. Mus. Genov. (2) xx, p. 614 (1900: Santa Cruz, Jan., July, Aug.: Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. p. 5 (1900: Patagonia: Falkland Islands); Carbajal, La Patagonia, Part II. p. 256 (1900); Albert, Contr. Estud. Av. Chil. II. p. 511 (1901).

Hypomorphnus leucurus, Lafr. Rev. Zool. 1849, p. 388.

Päcilopternus erythronotus, Kaup, Contr. Orn. 1850, p. 76.

Buteo bracchatus, Pelz, Verh. z. b. Ges. Wien 1862, p. 142: id. Reise Novara, Vög. p. 6 (1865: Chili).

Buteo polyosoma, Schl. (nec Q. & G.), Mus. Pays-Bas, II. Buteones, p. 12 (1862: Falkland Islands).

Buteo albicaudatus, Scl. & Salv. (nec Vieill.) P. Z. S. 1873, p. 186 (Cosnipata); Durnf. Ibis, 1877, p. 187 (Buenos Aires, common resident).

Buteo albigula, Phil. Vog. Chil. Arch. Naturg. 1899, p. 169 (Chili).

Buteo (Asturina) elegans, Phil. tom. cit. p. 169.

(Inasmuch as the specimen from Tierra del Fuego mentioned by Cassin in the U. S. Expl. Exp., p. 94, as *B. ventralis*, and still preserved in the U. S. National Museum, seems undoubtedly to be a young *B. erythronotus*, it seems reasonable to include all the following references under this species—W. S.)

Buteo ventralis, Gould, P. Z. S. 1837, p. 10 (Santa Cruz, Patagonia): id. Voy. Beagle, Birds, p. 27 (1841); Gray, Cat. Accipitr. Brit. Mus. p. 18 (1844); Des Murs in Gay's Hist. Chil. Zool. I. p. 218 (1847); Cass. U. S. Expl. Exp. p. 94, pl. iii, fig. 2 (1858: Patagonia: Orange Bay, Tierra del Fuego); Phil. & Landb. Cat. Av. Chil. p. 3 (1868).

Phalcobæus montanus, Fraser, P. Z. S. 1843, p. 108 (Andes of Chili, from 5,000 to 8,000 feet).

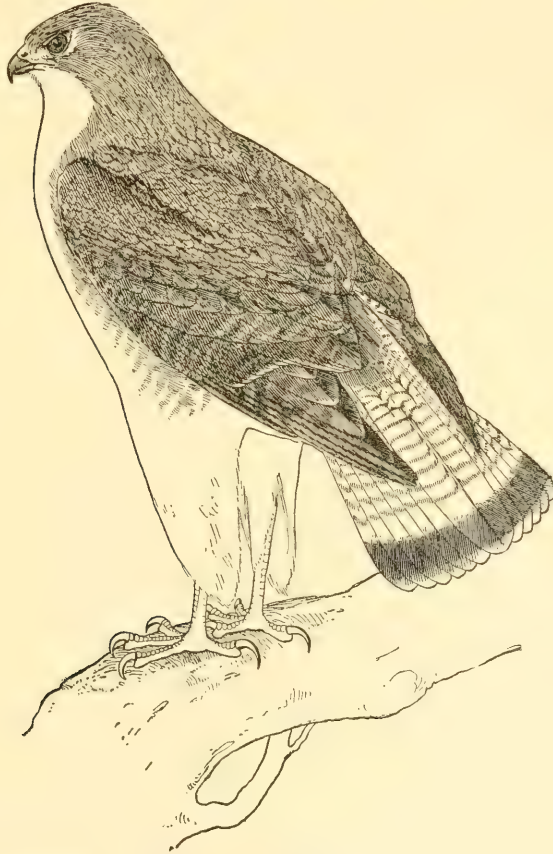
Buteo montanus, Sharpe, Cat. B. Brit. Mus. I. p. 189 (1874: Santa Cruz, Patagonia); Burm. An. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Santa Cruz).

Buteo borealis, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 253, 324 (1891: Santa Cruz, Patagonia).

Buteo borealis subsp. *montanus*, Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Santa Cruz, Patagonia).

In considering a large series of skins of *Buteo erythronotus*, it is apparent that they may be divided into five distinct plumages which may be discriminated as adult and, if by this we mean breeding birds, there are

FIG. 322.



Buteo erythronotus. Adult male. P. U. O. C. 8307. One-fourth natural size.

three plumages in which the birds breed; a fourth plumage is the normal immature and young birds of the year, while a bird collected by Mr. Hatcher, which can only be described as black, must be a dimorphic, or dichromatic phase; this seems unusual and has not been heretofore dealt with; as to age it appears to be an adult.

Two of the plumages in the adult stage seem to fairly correlate with the sex of the birds, the adult male with clear slate color prevailing, the adult female with a more or less rusty red back and otherwise much like the male; the third phase is that of adult birds that are nearly similar in appearance, and while having the rusty back of the oldest females, are more heavily barred and often rusty beneath; in this dress the sexes are alike or nearly alike, allowing for individual variation. The fourth plumage presented by these birds correlates strictly with age. Of the fifth, or dimorphic form, the material at present to hand does not warrant generalization.

These five presentations of this hawk are given below in all detail and as field notes made by the naturalists from Princeton, who collected most of the series, are available, we are in position to have precise ideas as to the appearance of *Buteo erythronotus*.

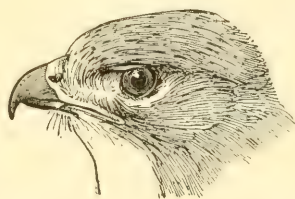
GENERAL DESCRIPTION.

Size.—No. 8307, adult male. P. U. O. C., Rio Chico, Patagonia, 10 March, 1898.

Total length, about 20.50 inches.

Wing, 14.12 inches.

FIG. 323.



Buteo erythronotus. Adult male. P. U. O. C. 8307. About one-half natural size.

Culmen, 1.2 inches.

Tail, 8.0 inches.

Tarsus, 3.25 inches.

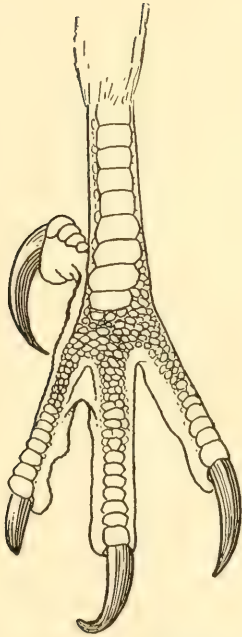
Three males in the perfectly adult plumage, all from Patagonia, do not differ much in measurements; the longest wing is just under 15 inches and the smallest is given above. These three birds are of almost exactly the same length.

Color.—Adult male cited above.

Head: Each feather with a black shaft making a hair-line. Clear, cold slate above; the forehead, lores and cheeks white, the cheeks streaked with slaty.

Neck: Above clear slaty, the feathers with the shafts black as on the crown, making a hair-stripe; chin and throat pure white.

FIG. 324.



Buteo erythronotus. Detail of foot from in front. P. U. O. C. 8307. Natural size.

FIG. 325.



Buteo erythronotus. Detail of foot from side. P. U. O. C. 8307. Natural size.

Back: Interscapular region and lower back clear slate, the feathers with black hair-line shafts; rump shading into white, with slate bars to each

feather and the upper tail-coverts, like the rump, white barred with slate, except the outer ones, which are immaculate.

Tail: White; crossed by nine or more wavering bars of ashy slate, with a subterminal band of black an inch wide and a terminal white bar half an inch wide. Seen from below, the tail is immaculate, save for the broad subterminal band of black.

Wings: Four outer primaries with the inner webs distinctly emarginate. The primaries black at their extremities for from two to three inches, the exposed outer web shaded throughout with silvery grey, and the inner webs, for all but the extremities, ashy, shading into pure white and barred with eight or more definite dark ashy bars; the secondaries slaty, like the interscapular region, with rather broad white tips, an obscure subterminal band and eight or more obscure bars of deep ash; the inner secondaries not tipped with white; all the coverts slaty-grey, clear in tone like the back, with black lines down the center from the black shafts and obsoletely barred and marked with deep ash; scapulars like the back; under wing-coverts white, with narrow ashy barring at wide intervals; the axillaries more strongly barred with clear slate, which color predominates here.

Lower parts: All pure silvery white; on the sides faint barring of clear slate, otherwise immaculate; *no barring on the thighs or under tail-coverts.*

Bill: Slate horn-color (Hatcher).

Cere: Dark yellowish green (Hatcher).

Iris: Deep hazel-brown (Hatcher).

Feet: Feet and legs bright yellow (Hatcher).

Adult female, P. U. O. C. 7947. Arroyo Eke, near Cape Fairweather, Patagonia, 16 May, 1898. A. E. Colburn.

Size.—Length, 24.00 inches; wing, 16.25 inches; culmen, 1.50 inches; tail, 9.50 inches; tarsus, 3.75 inches.

Color.—Similar to the adult male, but the slate is darker and more shaded with brownish. The upper neck and whole interscapular region and some of the shorter scapulars bright rusty red, the feathers slightly tipped with slate and hair-lined down their centers by the shining black shafts. The white of the lower parts barred in wavering lines with deep ash, as are the exterior upper tail-coverts.

Mr. Hatcher collected two specimens. No. 7868 P. U. O. C. is labelled ♂? and was taken at or near Coy Inlet, Patagonia, September 16, 1896 (J. B. Hatcher). It measures far under the standard of the smallest

females (length 20.90; wing 14.60), and there can be little doubt that it is a male. The other bird also labelled male is a little larger, but still far under the standard of the female (21.00 length; wing 15.20), was taken at Punta Arenas, Chili, on December 24, 1897, by Mr. Hatcher (P. U. O. C. 7869).

This latter bird has faint traces of rusty red on a very few of the feathers of the upper back and is, except for a few faint wavering bars across the abdomen, like the adult male described above. No. 7868 is even more typical of the very adult male, in the silvery slate of the upper parts and the almost immaculate lower surface, but on the interscapular region there is a small but very appreciable area of bright rusty red.

These two males are of interest as being intermediate in plumage between two males and the female adult stage, these latter males have more rusty on the back, while they approach the immature and young of the year in the plumage of the lower parts. At the risk of some confusion, these birds may be considered here. No. 7867 was taken at Coy Inlet, Patagonia, 15 October, 1896, J. B. Hatcher; and No. 7870 on the Pacific Slope of the Cordillera, Patagonia, 12 March, 1897, J. B. Hatcher.

The bird taken near Coy Inlet, No. 7867, is in detail as follows:

Head: The crown deep seal-brown, each feather margined more or less definitely with rusty and cottony white at the base; lores and forehead, as well as the sides of the face, isabelline, the feathers with black shafts, giving a fine streaked look; a defined moustachial streak reaching from the lower mandible to below and well back of the ear-coverts, deep seal-brown.

Neck: Above and on the sides rusty red, the feathers of the nape with arrow-shaped markings of deep seal-brown; chin, throat and lower neck white, somewhat obscured with very pale buff.

Back: Interscapular region rusty red; lower back and rump rusty red, barred broadly with deep seal-brown; upper tail-coverts white, with wavering cross bars of deep seal-brown or rusty.

Tail: White; the outer webs inclining to slaty, obscurely barred and vermiculated with slaty brown; the inner webs more distinctly white and crossed by many wavering bars of dusky slate; an obscure subterminal band of dusky slate and broad tips of white; the inner webs of the two central feathers are vermiculated with dusky slate, except terminally, where the barring appears. Seen from below, the closed tail is immaculate white, with a subterminal narrow obscure bar of dusky slate.

Wings: Primaries dull seal-brown at their extremities, barred at intervals with broad bars of deeper seal; the exposed outer webs washed with slaty; the inner webs white, almost immaculate; secondaries pale ashy brown on their exposed surfaces, barred with deep seal-brown and washed

FIG. 326.



Buteo erythrionotus. Immature male. P. U. O. C. 7870. About one-fourth natural size.

with slaty; they are broadly tipped with white and the inner webs are like the outer at the tip end but soon become pure white, clearly barred with deep seal-brown; the scapulars rusty like the back and marked and spotted with deep seal-brown; the coverts deep seal-brown, margined with rusty red and some of the median series slaty, with deep seal barring

and rusty margins and edges; the whole of this part of the wing appears mottled slaty, seal and clear rusty red; lower wing-coverts and axillaries white, barred with clear rusty red and with some bars clearly double in color, a line of rusty and a line of deep seal-brown conjoined into a narrow bar; a few of the terminal under wing-coverts have clear slate bars.

Lower parts: The chest and upper breast clear buffy white; the rest of the under surface buffy white, barred clearly and definitely with bright rusty red; this becomes faint and obsolete on the vent and almost disappears on the under tail-coverts, which are buffy white; on each side of the breast there is an area of clear rusty red, the feathers being so heavily, but irregularly, marked with that color on a buff white ground, as to form a band; the sides and flanks as well as the thighs are buffy white, clearly barred with bright rusty red.

Bill and cere: Horn-blue (J. B. Hatcher).

Feet: Feet and legs bright yellow (J. B. Hatcher).

Iris: Pale yellow-brown (J. B. Hatcher).

The other bird, No. 7870, is similar, but the colors are better defined; the crown is deep seal-brown; the moustachial streak almost black; the red of the back and scapulars is brighter and the mottling on these feathers is deep seal-brown; the markings on the tail are more definite; seen from above, the subterminal band is more definite than in 7868; the barring and shading of the feathers is clearer; from below, the tail is clear white, with a broad subterminal band (three-fourths of an inch) black and a terminal band of white of about the same width; the throat is buffy white and the breast and chest rusty white; the barring beginning on the lower breast is very clear deep seal; this is on the breast suffused by the rusty, but bars on the abdomen, flanks and thighs are on a pure white ground and clear; the under tail-coverts are rusty, barred with a deeper rusty shade; "eye bright yellow" (J. B. Hatcher); bill blue-horn and feet and legs dull green-yellow (J. B. Hatcher).

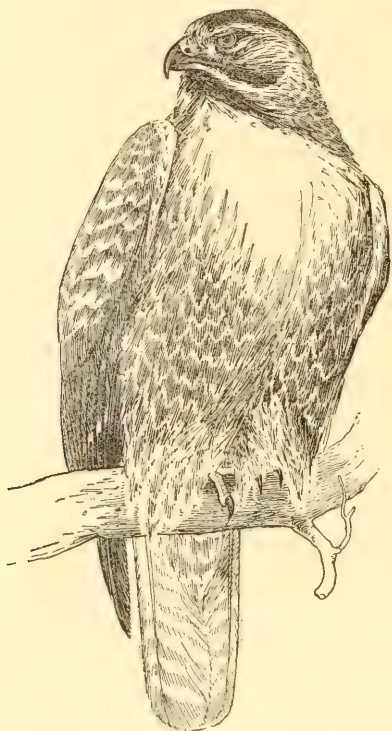
Immature birds and young of the year.—No. 7864, male juv., P. U. O. C. Rio Chico, Cordilleras of Patagonia, 18th March, 1897, J. B. Hatcher.

Head: Top of head dark seal-brown; the lores and forehead white; region behind the eye and ear-coverts deep buff, with narrow dark brown stripes; cheeks dark seal-brown, forming a distinct moustache; the feathers of the crown with cottony white bases.

Neck: Deep buff on throat and under neck; the throat heavily streaked

with seal-brown, the under neck immaculate; the nape and sides of the neck deep seal-brown; all the feathers margined and bordered with deep buff.

FIG. 327.



Butco erythronotus. Immature, P. U. O. C. 7864. About one-fourth natural size.

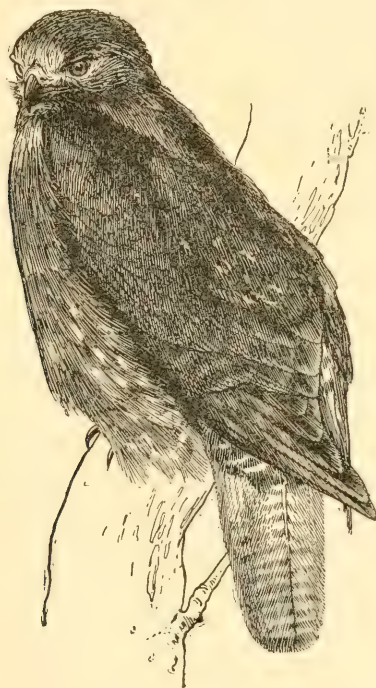
Back: Interscapular region, back and upper tail-coverts deep seal-brown, the feathers margined, tipped and mottled with deep buff.

Tail: Ashy grey above; crossed by fifteen or more ashy brown bars (one-fourth inch wide) and with a subterminal bar of double width; tipped broadly with buffy brown. From below, the tail is ashy white, with obsolete barring of dull slate, the terminal band much as from above and the subterminal bar more than double the width of any of the others and the same in color.

Wings: Primaries and primary coverts deep seal-brown, more or less

shaded with slaty grey, hoary in character, and crossed with many deeper seal-brown bars; the primaries become white on their inner webs for two-thirds of their length, and this color is not marked in any way after it loses the brown terminal region; secondaries much like the primaries in shade and color, rather more heavily barred, tipped with deep buff, and the white region of the web barred with seal-brown; the rest of the upper wing-

FIG. 328.



Buteo erythronotus. Dark plumage. P. U. O. C. 7865. About one-fourth natural size.

coverts much like the interscapular region, deep seal-brown, tipped, margined and mottled with deep buff; under wing-coverts deep buff, inclining to rufous, with barring of deep seal-brown; axillaries paler buff, marked and barred heavily with deep seal-brown.

Lower parts: Deep tawny buff; streaked on the chin and upper throat with deep seal-brown; center of the upper breast immaculate, the sides

streaked like the throat; the rest of the breast streaked and spotted with arrow-shaped marks of deep seal-brown; abdomen not so definitely marked with brown, which here is shaded with rufous; the thighs and under tail-coverts deep buff, inclining to rusty, and marked with triangular-shaped barring of rusty brown, bright in tone.

"Bill horn-blue; iris dark brown; feet and legs yellowish-green" (J. B. Hatcher).

Dark phase.—Male. No. 7865 P. U. O. C. Pacific Slope, Cordilleras of Patagonia, 16 March, 1897. J. B. Hatcher.

The prevailing color throughout on the body is chocolate or deep seal-brown; this is shaded on the back with tawny, on the wings, which are barred on all the coverts and quills obsoletely with deeper shades, with slate-grey, hoary in character; there is also some rufescent shading on the very dark, immaculate under surface; the tail is slate-grey from above and pale silvery grey from below, crossed by sixteen or more narrow wavering bars of deep brown; the tail is broadly tipped with pale slate frosted with white. "Eye light brown; bill blue horn-color; feet and legs yellow" (J. B. Hatcher). Length 20.00; wing 14.90.

Geographical Range.—From just south of Buenos Aires throughout Patagonia, northern Tierra del Fuego and the Falkland Islands; the Straits of Magellan and north on the Pacific Coast into Peru.

This hawk appears to be resident where it occurs and to be one of the conspicuous elements in the bird fauna of Patagonia. It breeds in October and November, and as its range is extended by our present knowledge into the forests of the Cordilleras as well as on the more open pampas and plains, to very high altitudes, we may conclude that the time of breeding varies considerably with the range. The birds nest in trees and low bushes as well as upon cliffs, but it seems improbable that they nest at any point in "long grass" upon the ground, as suggested by Mr. Holland, in notes appended. Birds of this genus, notably *Buteo borealis*, we are well aware, adapt themselves to local conditions so as to depart from inaccessible nests in high trees, to nests in bushes or low trees so near the level of the ground as to be easily examined without even climbing, the investigator being well able to see all that is inside the structure, while standing on the ground. But, so far as we have data we are unable to get records of the nest of any kind of *Buteo* directly on the ground.

The variation in plumage in this hawk has long been known and has been dwelt on by those who have observed the birds. There has been, so far as we can discover, no detailed account of the dark phase discussed in this connection from material taken by Mr. Hatcher. There is in the Princeton Museum a bird (No. 8671) that nearly approaches No. 7865, from the Cordilleras of Patagonia. It was collected by S. Pozzi, in the La Plata region near Buenos Aires, and is labelled *Buteo albicaudatus*, ♀, needless to say an error in identification. While the bird is not so definitely dark on the lower surface, the black of the throat and breast shading into white about the vent, yet the upper parts are dull deep brownish-black throughout. The tail is much as in the dark bird already described.

All the birds here considered have been carefully compared with the material in the British Museum and the descriptions are wholly based on birds procured by the naturalists sent out by Princeton, who were fortunate enough to obtain material extending our knowledge of the appearance of this hawk, as well as to get all the heretofore known plumages.

A. H. Holland, in his account of the Birds of Estancia Sta. Elena (Ibis, p. 216, 1895) says of this species: "A common hawk here at all seasons, often seen in company with *C. cinereus*, and beating up its prey from bushes and weeds in much the same way. Its stoop is more powerful, and its longer breadth of wing enables it to fly with more despatch and in a sailing manner. It breeds in the long grass, but, so far, I have not discovered its nest."

Hudson in "Idle Days in Patagonia," 1893, pp. 212-214, describes its habitat as follows: "On arriving at a hill, I would slowly ride to its summit, and stand there to survey the prospect. On every side it stretched away in great undulations; but the undulations were wild and irregular; the hills were rounded and cone-shaped, they were solitary and in groups and ranges; some sloped gently, others were ridge-like and stretched away in league-long terraces, with other terraces beyond; and all alike were clothed in the grey everlasting thorny vegetation. How grey it all was! hardly less so near at hand than on the haze-wrapped horizon, where the hills were dim and the outline blurred by distance. Sometimes I would see the large eagle-like white-breasted buzzard, *Buteo erythronotus*, perched on the summit of a bush half a mile away; and so long as it would continue stationed motionless before me my eyes would remain involuntarily fixed on it, just as one keeps his eyes on a bright light shining in the gloom; for the whiteness of the hawk seemed to exercise a fasci-

nating power on the vision, so surpassingly bright was it by contrast in the midst of that universal unrelieved greyness."

BUTEO SWAINSONI, Bonaparte.

Buteo swainsoni, Bonap., Geogr. and Comp. List, p. 3 (1838); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873); Gurney, Ibis, 1876, p. 234, id. List Diurn. B. Prey, p. 68 (1884); Scl. & Huds. Argent. Orn. II. p. 59, pl. xvi (1889); Sharpe, Hand-list B. I. p. 256 (1899).

FIG. 329.



Buteo swainsoni. Adult male. About one-fourth natural size. From a bird in the American Museum.

Buteo obsoletus, Sharpe, Cat. B. Brit. Mus. I. p. 184 (1874: Patagonia); Burm. An. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Patagonia); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia); Albert, Contr. Estud. Av. Chil. II. p. 516 (1901).

Buteo pictus, Phil. Voy. Chil. Arch. Naturg. 1899, p. 169.

Buteo macronychus, Phil. tom. cit. p. 168.

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 20.00 inches.

Wing, 15.7 inches.

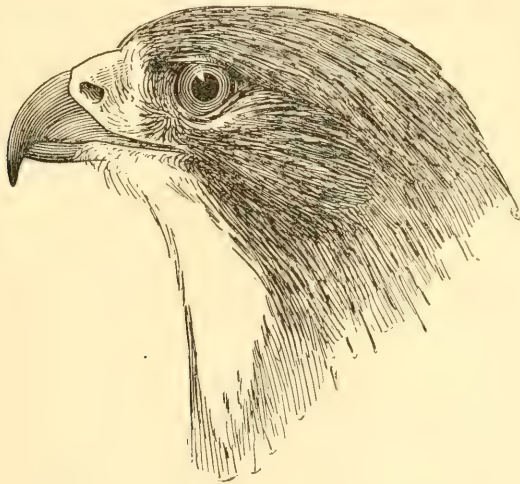
Culmen, 1.0 inch.

Tail, 8.7 inches.

Tarsus, 2.8 inches.

There is a very considerable variation in size in different adult male birds; this one given is rather large.

FIG. 330.



Buteo swainsoni. Adult male. Natural size.

Color.—Adult male.

Head: Forehead white; crown, sides of head and face deep greyish brown, the feathers cottony at their bases.

Neck: Chin and throat white, the color terminating abruptly on the chest and forming a white patch; rest of the neck like the head, but a little lighter on the nape.

Back: Interscapular region, back, rump and upper tail-coverts uniform greyish brown.

Tail: Dull greyish brown, often inclining to hoary, and crossed by nine or ten darker bars, which become obsolete at the base of the feathers; the

subterminal bar is broader than the others; the terminal bar is lighter and often shaded with buffy.

Wings: *Only the outer three primaries with inner webs distinctly emarginate*; uniform greyish brown throughout like the back; the feathers of the shoulders often with paler margins.

FIG. 331.



Buteo swainsoni. Foot of adult male. Natural size.

Lower parts: The chin and throat forming a white patch; chest and upper breast uniform bright rufous or cinnamon, making a distinct band; remainder of the lower parts buffy white, sometimes spotless, but generally barred and marked with rusty brown; the under tail-coverts are usually immaculate buffy white but are frequently faintly barred with rusty brown.

Bill: Horn-blue, with a yellowish cere.

Iris: Light pale brown.

Feet and legs: Yellowish, with olive shading.

Adult female: Very much like the adult male, but with less white on the forehead; the chest band greyish brown instead of cinnamon and concolor with the back; all the colors duller or deeper. Notably larger in size. Length 22.00; wing 17.00 inches.

FIG. 332.



Buteo swainsoni. Adult female. About one-fourth natural size. From a bird in the American Museum.

Adult melanistic plumage; either sex: Whole plumage uniform dusky; the tail dusky with deeper bars, nine or ten crossing the subterminal one being broader than the others; in very dark individuals this is obsolete.

There is every possible gradation between this phase, which in its purest form is uncommon, to the normal adult dress.

Young of the year and immature birds: Above deep brown, the feathers margined and tipped with buffy brown; the head lighter, with a distinct supraciliary buffy line; the throat whitish and the rest of the lower parts buffy, deep in tone and splashed or marked with brown, nearly black; the tail is much as in the normal adult; the upper tail-coverts barred broadly

with blackish on a buffy white ground and the lower tail-coverts buffy, with narrow cross bars of dusky.

Geographical Range.—Western North America, more common west of the Mississippi, and ranging north into Alaska and the region west of Hudson Bay; south through Middle and South America; on the eastern side as far south as northern Patagonia.

FIG. 333.



Butco swainsoni. Immature male. About one-fifth natural size. From a bird in the American Museum.

This does not appear to be a common bird in the Patagonian region and the records of it are but few, and these from the more northern parts of the province. The species was not noticed by the Princeton naturalists and the descriptions here given are based on birds in the University Museum from Western North America, and from a large series in the American Museum.

Genus HARPYHALIAETUS, Lafresnaye.

Type.

Harpyhaliaetus, Lafr. Rev. Zool. 1842,

p. 173; Sharpe, Cat. Bds. Brit.

Mus. i. p. 221 (1874); Sharpe,

Hand-List Bds. i. p. 259 (1899). *H. coronatus*.

Urubitornis, Verr. P. Z. S. 1856, p.

145 *H. coronatus* var. (?) = *H. solitarius*.

Geographical Range.—South America, from Chili and N. Patagonia as far north as Veragua in Central America.

HARPYHALIAETUS CORONATUS (Vicillot).

Aquila coronada, Azara, Apunt. I. p. 56 (1802).

Harpyia coronata, Vicill. N. Dict. d'Hist. Nat. xiv, p. 237 (1817: ex Azara).

Falco coronatus, Temm. Pl. Col. I. pl. 234 (1823); D'Orb. Voy. Amér. Mérid. Ois. p. 75 (1835: Rio Negro, Patagonia).

Circaetus coronatus, Cuv. Règn. Anim. I. p. 328 (1829); Hartl. Ind. Azara, p. 1 (1847).

Harpyhaliaetus coronatus, Lafr. Rev. Zool. 1842, p. 173; Huds. P. Z. S. 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873: Patagonia); Sharpe, Cat. B. Brit. Mus. I. p. 221 (1874: Patagonia); Gurney, Ibis, 1876, p. 490; id. List Diurn. B. Prey, p. 77 (1884); Scl. & Huds. Argent. Orn. II. p. 63 (1889); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 252, 324 (1891: Rio Negro, Patagonia); Sharpe, Hand-list B. I. p. 259 (1899); Carbajal, La Patagonia, Part II. p. 256 (1900); Albert, Contr. Estud. Av. Chil. II. p. 533 (1901).

Circaetus solitarius, Cab. & Tsch. Arch. fur Naturg. 1844, p. 264.

Asturina azaræ, Kaup, Isis, 1847, p. 209.

Thrasaetus coronata, Bp. Consp. Av. I. p. 29 (1850).

Urubitornis solitaria, Verr. P. Z. S. 1856, p. 14; Salv. Ibis, 1870, p. 214; Scl. & Salv. Nomencl. Av. Neotr. p. 119 (1873).

Asturina coronata, Schl. Mus. Pays Bas, II. Asturinæ, p. 12 (1862).

GENERAL DESCRIPTION.

Size.—Adult male.

Total length, about 33.00 inches.

Wing, 22.4 inches.

Culmen, 3.2 inches.

Tail, 13.6 inches.

Tarsus, 5.0 inches.

Color.—Adult male.

Head: Crown ashy brown; an occipital crest of long feathers much darker than the crown; a band behind the eye along the side of the head,

buffy white or whitish, each feather with a narrow dark median stripe; the sides of the head and face white, or isabelline, with ashy centers to the feathers; upper region of the ear-coverts immaculate ashy brown.

Neck: Whitish, or isabelline, with ashy centers to the feathers; darker above like the crown.

Back: Interscapular region ashy brown, with a decided chocolate suffusion and pearl-grey shading; upper back similar; rump and upper tail-coverts darker ashy brown, without the grey shading; the tail-coverts tipped broadly with white.

Tail: Black; the feathers are tipped with white and a broad white median band crosses them; the outer feathers show traces of a second white band near their bases.

Wings: Primaries black, shaded on their external edges with grey; secondaries grey, with an ashy tinge, with a broad subterminal bar of black and blackish mottling, each feather tipped with white; the inner secondaries and the remainder of the upper wing surface like the back; under wing-coverts clear pale grey, varied with white streaks and margins to the feathers; axillaries similar.

Lower parts: The entire under surface of the body immaculate ashy brown; the thigh feathers deep brown, shading to black toward the tarsal joint, with white margins to the feathers; the under tail-coverts ashy brown, with broad margins and tips of clear white.

Bill: Blue horn-color, shading to yellow at the base cere yellow.

Iris: Brown or reddish brown.

Feet: Feet and legs clear deep yellow.

The sexes do not appear to differ in either size or color.

Geographical Range.—From Veragua in Central America, southward to Chili and northern Patagonia.

The part of Patagonia in which this bird has been recorded was not entered by the naturalists sent out by Princeton, and we can therefore contribute little to the history of the species.

Subfamily, *AQUILINÆ*.

Sharpe, Cat. Birds Brit. Mus. i. p. 225 (1874); Sharpe, Hand-List Birds, i. p. 260 (1899).

Genus FALCO Linnæus.

- Type.
- Falco*, Linn. S. N. Ed. X. i. p. 88 (1758); Sharpe, Cat. Bds.
 Brit. Mus. i. p. 374 (1874); Sharpe, Hand-
 list Bds. i. p. 273 (1899) *F. subbuteo*.
Tinnunculus, Vieill. Ois. Amér. Sept. i. p. 39 (1807) *F. columbarius*.
Hypotriorchis, Boie, Isis, 1826, p. 967 *F. subbuteo*.
Æsalon, Kaup, Naturl. Syst. p. 40 (1829) *F. regulus*.
Dendrofalco, Gray, List Gen. B. p. 3 (1840) . . *F. subbuteo*.
Lithofalco, Blasius *F. regulus*.
Gennaia, Kaup, Isis, 1847, p. 69 *F. jaggur*.
Chicquera, Bp. Rev. et Mag. de Zool. 1854, p. 535. *F. chicquera*.
Turumtia, Blyth, Ibis, 1863, p. 9 *F. chicquera*.
Rhynchofalco, Ridgway, Pr. Bos. Soc. Nat. Hist.
 1873, p. 46 . *Falco femoralis*, Temminck = *F. fusco-cærulescens*.
Geographical Range.—The entire world except Oceania.

FALCO CASSINI Sharpe.

- Falco peregrinus*, King (nec Tunst.), Zool. Journ. iii. p. 425 (1827: Port
 Famine); Des Murs in Gay's Hist. Zool. I. p. 224 (1847); Phil. &
 Landb. Cat. Av. Chil. p. 4 (1868); Ridgw. Proc. U. S. Nat. Mus.
 XII, p. 136 (1889: Elizabeth Isl.); Albert, Contr. Estud. Av. Chil.
 II, p. 540 (1901).
Falco nigriceps, Cass. U. S. Astr. Exp. p. 176, pl. xiv (1855).
Falco cassini, Sharpe, Ann. Nat. Hist. (4) XI, p. 223 (1873); id. Cat. B.
 Brit. Mus. I, p. 384 (1874: Straits of Magellan); Gurney, Ibis, 1882,
 p. 300; id. List Diurn. B. Prey, p. 107 (1884); Burm. An. Mus.
 Nac. Buenos Aires, III, part x, p. 241 (1888: Straits of Magellan);
 Sharpe, Hand-list B. I, p. 274 (1899); Martens, Hamb. Magalh.
 Sammelr. p. 6 (1900: Straits of Magellan); Salvad. Ann. Mus.
 Genov. (2) xx, p. 614 (1900: Possession Bay, July).

GENERAL DESCRIPTION.

Size.—Adult male. No. 7903 P. U. O. C. Coy Inlet, coast of Pata-
 gonia, 22 November, 1896. J. B. Hatcher, collector. Or. No. 279.
 Total length, 16.50 inches.

Wing, 12.00 inches.

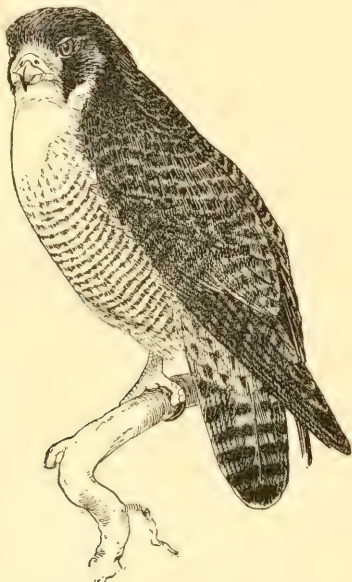
Culmen, without cere, 0.75 inches; with cere, 1.00 inches.

Tail, 7.25 inches.

Tarsus, 1.90 inches.

Adult female. P. U. O. C. No. 7902, near Coy Inlet, coast of Patagonia, 19 October, 1896. J. B. Hatcher, collector. Or. No. 214. Total length, 21.00 inches; wing 13.90; culmen, without cere 1.00; with cere, 1.25; tail 7.90; tarsus 2.10.

FIG. 334.



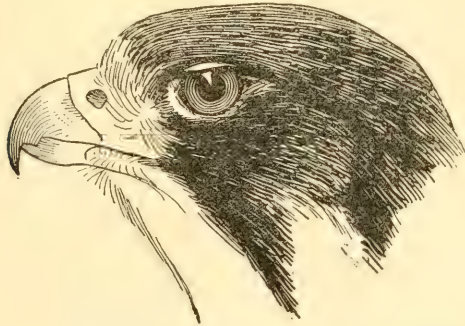
Falco cassini. Adult male, P. U. O. C. 7903. Coy Inlet, Coast of Patagonia.
About one-fourth natural size.

Color.—Adult male cited.—Head: Forehead and a triangular spot in front of eye dull white; crown dull black, each feather margined and tipped with bluish lead-color so broadly as to almost conceal the dark, sagittate-shaped central portion of each feather; region above the eye and moustachial streak, as well the ear-coverts and cheeks, deep black, unshaded except that the ear-coverts show light edges to some of the feathers.

Neck: Above and on the sides like the crown, but the bluish lead-color does not prevail, showing only as a narrow edging to the dark feathers; chin, throat and lower neck pure white and immaculate.

Back: Interscapular region barred with black on a dull bluish lead-colored ground, the lighter shade prevailing over the dark because of the broad bluish lead-colored tips of each feather; there are three to four strong dark bars on each of the feathers of this region; on the middle and lower back the black bars are much narrower and farther apart and become sagittate in shape as the rump is reached; the rump and upper tail-coverts are light slate-color, with sagittate markings and bars, chiefly concealed, on each feather; the effect on the back is that of dark brownish black, shaded with bluish lead-color; that of the middle and lower back, as well as the rump and upper tail-coverts, light slate-blue with dark markings so narrow as not to affect the tone.

FIG. 335.



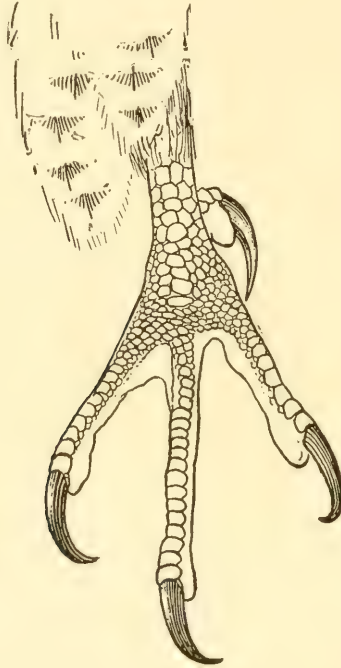
Falco cassini. Adult male, P. U. O. C. 7903. Natural size.

Tail: Bluish slate at base, shaded somewhat with ash toward the tip; the slate-blue of the wide interspaces at the base becomes less defined toward the end of the tail and shaded more or less with ashy, while the narrow black bars of the basal portion gradually widen till they are as wide as the interspaces toward the tip; each rectrix broadly tipped with fulvous. This tip is usually very much worn even in birds in otherwise perfect plumage, and this is due to the feeding habits of this hawk, the tail being pressed down on the dead duck or other prey, held in the strong talons.

Wings: Upper wing-coverts like the interscapular region in color and marking; from above, the quills are dull brownish black, with almost obsolete bars or spots of dull slate on most of these feathers; the inner

secondaries uniform with the color of the back; seen from beneath, the wing is pale whitish ash, definitely and regularly barred, except at the tips of the quills, with ashy brown, vermiculated on the inner webs more or less with the same shade.

FIG. 336.

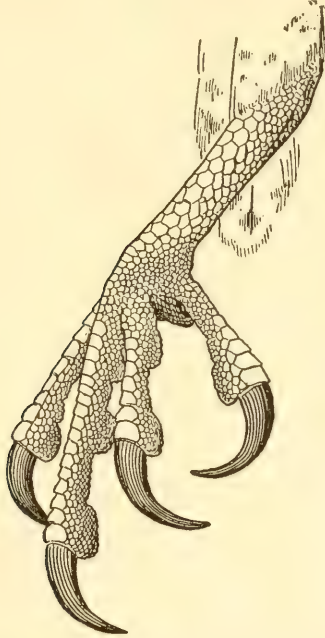


Foot of *Falco cassini*; adult female, P. U. O. C. 7902. From in front; natural size.

Lower parts: Chin and throat immaculate white; upper breast immaculate white, save for the very narrow black shaft lines of some of the feathers and in some individuals a shading of cream-color on fawn; the rest of the under surface white or creamy white, with a decided shading of faint grey, each feather crossed with three or more narrow black bars, sometimes showing a tendency to arrow-shaped marks, this particularly in the mid-breast and on the flanks and feathered parts of the legs; the region about the vent is almost immaculate and the under tail-coverts, the axillaries and the under wing-coverts are barred like the rest of the lower surface.

Bill orange-yellow at base, shading into clear blue horn; cere orange-yellow.

FIG. 337.



Foot of *Falco cassini*; adult female, P. U. O. C. 7902. From the side; natural size.

Feet orange-yellow; the claws bluish black.

Iris dark hazel-brown.

The adult female cited above is colored like the bird just described; there is a stronger tendency to cream and buffy shades on the lower surface and the barring is stronger and less broken by sagittation on the feathers.

Young birds of the year and till they assume full plumage are very different in color from the adults and also appear to average a little larger in size.

Head: Forehead and feathers in front of eye whitish; crown deep blackish brown, the feathers more or less margined with chocolate or dull chestnut; feathers under the eye, the sides of the face, and a moustachial streak, not so wide as in the adult, deep black; ear-coverts shaded with buffy or chestnut.

Neck: Nape, hind neck and sides like the crown, the nape tinged with chestnut and the feathers all margined to a greater or less degree with the same shade; throat and chin deep creamy buff.

Back: Like the crown and neck in general color throughout, the feathers all margined with rufous, or chestnut, except on the rump and upper tail-coverts, where they are tipped definitely with buff.

Tail blackish, with a strong brown undertone; each rectrix is crossed with four or more indistinct grey bars, which shade into rufous on the inner webs; all the tail feathers tipped with deep creamy buff.

Wings: The upper wing-coverts like the interscapular region in color and margins; the quills, except the inner secondaries, blackish-brown, the inner webs notched or half barred with rufous; the inner secondaries like the back and tipped with buff.

Lower parts: Chin and throat as described, deep creamy buff, which changes on the breast to deep reddish brown, stronger on the breast and sides, paler on the abdomen and under tail-coverts; all the feathers medianally streaked with a long blackish spot, which becomes more prominent and arrow-shaped on the feathers of the flanks; *the lower surface presents a streaked, not a barred appearance*; the under wing-coverts and axillaries deep rufous, barred or mottled with blackish.

Bill: Dull greenish yellow, shading into bluish green at the tip; the cere dull greenish yellow.

Feet: Yellow; the claws brown.

Iris: Dark hazel-brown.

Geographical Range.—Chili, southern Patagonia and adjacent regions. The lands about the Straits of Magellan. Common in the province of La Plata, Argentina (W. H. Hudson).

Cassin's Peregrine was secured by Mr. Hatcher on the two occasions above cited and seems to be a fairly common bird throughout the Straits. It is the most destructive bird-hawk of the country it inhabits, feeding on ducks, herons and small species like doves and tinnamou. It breeds on the faces of cliffs in inaccessible places, its eyrie being used for many seasons, if not continuously, for it is rarely disturbed. There are no sets of eggs in the collection of the British Museum, but these are doubtless very like those of the other large peregrines.

Hudson, in his *Naturalist in La Plata* (pp. 95-96), says: "The wide-ranging peregrine falcon is a common species in La Plata, although, oddly

enough, not included in any notice of the avifauna of that region before 1888. The consternation caused among birds by its appearance is vastly greater than that produced by any of the raptors I have mentioned; and it is unquestionably very much more destructive to birds, since it preys exclusively on them, and, as a rule, merely picks the flesh from the head and neck, and leaves the untouched body to its jackal, the carrion-hawk. When the peregrine appears speeding through the air in a straight line at a great height, the feathered world, as far as one is able to see, is thrown into the greatest commotion, all birds, from the smallest up to species large as duck, ibis and curlew, rushing about in the air as if distracted. When the falcon has disappeared in the sky, and the wave of terror attending its progress subsides behind it, the birds still continue wild and excited for some time, showing how deeply they have been moved; for, as a rule, fear is exceedingly transitory in its effects on animals."

FALCO FUSCO-CÆRULESCENS Vieillot.

Alconcillo aplomado, Azara, Apunt. I. p. 175 (1802).

Alconcillo obscuro azulejo, Azara, tom. cit. p. 179.

Falco fusco-cærulescens, Vieill. N. Dict. d'Hist. Nat. XI. p. 90 (1817; ex Azara, p. 179); Fraser, P. Z. S. 1843, p. 109 (Chili); Sharpe, Cat. B. Brit. Mus. I. p. 400 (1874: east Patagonia); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 253, 324 (1891: Port Desire); Frenzel, J. f. O. 1891, p. 114 (Córdoba); Lane, Ibis, 1897, p. 180 (Vilugo); Sharpe, Hand-list B. I. p. 275 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900; east and central Patagonia).

Falco thoracicus, Licht. Verz. Doubl. p. 62 (1823: ex Azara, p. 175).

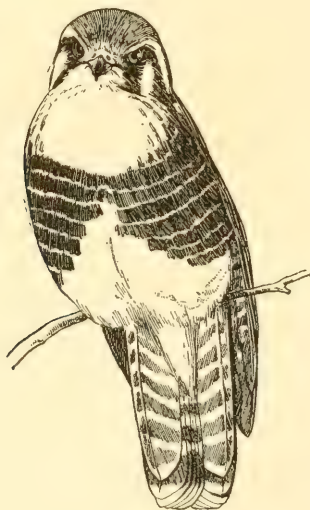
Falco femoralis, Temm. Pl. Col. I. pls. 121, 343 (1823: ex Azara, p. 179); Licht. Verz. Doubl. p. 61 (1823); D'Orb. Voy. Amér. Mérid. p. 116 (1835); Darw. Voy. Beagle, Birds, p. 28 (1841: Port Desire, Jan., breeding); Burm. Reis. La Plata, II. p. 437 (1861: Pampas near Rio Durato); Schl. Mus. Pays Bas, II. Falc. p. 20 (1862); Phil. & Landb. Cat. Av. Chil. p. 4 (1868); Burm. An. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Patagonia), part XI, p. 316 (1890: Fortin Villegas).

Falco cyanescens, Vieill. Enc. Méth. III, p. 1234 (1823: ex Azara, p. 179).

Hypotriorchis femoralis, Gray, Gen. B. I. p. 20 (1844); Hartl. Ind. Azara, p. 3 (1847); id. Naum. 1853, p. 220; Pelz. Reis. Novara Vög. p. 8

(1865: Chili); Scl. P. Z. S. 1867, pp. 330, 338 (Chili); Scl. & Salv. P. Z. S. 1868, p. 143 (Cónchitas, winter visitor), 1869, p. 155 (Tinta); Huds. P. Z. S. 1871, p. 260 (Patagonia), 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 121 (1873); Lee, Ibis, 1873, p. 131 (Arg. Rep., not common); Durnf. Ibis, 1877, p. 187 (Buenos Aires, winter visitor); 1878, p. 398 (central Patagonia, most numerous in winter, breeds in Nov.); Gibson, Ibis, 1879, p. 412 (Cape San Antonio, the only one observed in six years); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: valleys of the Rio Colorado and Rio Negro, abundant); White, P. Z. S. 1882, p. 41 (Cosquin, Córdoba, July); Withington, Ibis, 1888, p. 470 (Lomas de Zamora); Carbajal, La Patagonia, part II. p. 256 (1900).

FIG. 338.



Falco fusco-cærulescens. Adult male, P. U. O. C. 7946. About one-third natural size.

Æsalon femoralis, Kaup, Contr. Orn. 1850, p. 54.

Hypotriorchis aurantius, Heerm. Proc. Acad. Philad. 1854, p. 177.

Hypotriorchis fusco-cærulescens, Gurney, Ibis, 1882, p. 158; id. List Diurn. B. Prey, p. 103 (1884).

GENERAL DESCRIPTION.

Size.—Adult male. P. U. O. C. No. 7946. Rio Chico de Santa Cruz, Patagonia, 11 March, 1898. A. E. Colburn, collector. Or. No. 296.

Total length, 14.50 inches.

Wing, 9.75 inches.

Culmen, without cere, 0.70 inches; with cere, 0.95 inches.

Tail, 7.10 inches.

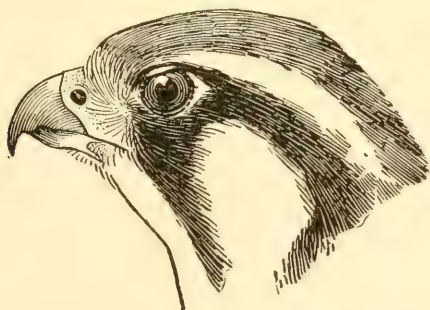
Tarsus, 1.85 inches.

Adult female. P. U. O. C. No. 7900. Near Coy Inlet, Patagonia, 21 November, 1896, J. B. Hatcher. Or. No. 278.

Length, 17.00. Wing, 11.40. Culmen, without cere, 0.80; with cere, 1.10.

Tail, 7.80 (the tips are worn). Tarsus, 2.00.

FIG. 339.



Falco fusco-cærulescens. Adult male. P. U. O. C. 7946. Natural size.

Color.—Adult male cited.

General color, above slate-blue, lead in tone; beneath, tawny rufous, with a black area on either side, which meet on the chest.

Head; Forehead narrowly white and a white triangular spot in front of the eye; crown deep slate-blue, each feather with a median black line; a stripe beginning over the eye reaches back and is confluent with the stripe of the opposite side, on the nape; this begins as a pure white stripe but is almost at once shaded with creamy, becoming deep buff, even tawny, on the sides of the head and nape; a post-ocular stripe, wider than the light stripe, defines it, being deep lead-slate in color; this band crosses the upper margin of the ear-coverts; the lower part of the ear-

coverts and sides of face white, often tinged with cream; a prominent moustachial cheek-stripe, deep lead-slate in color, defines the chin and upper throat.

Neck: Chin and throat pure white, which often is shaded with cream-color on the lower throat; sides of neck whitish, with creamy shade; above, the neck is concolor with the crown, deep slate-blue, separated from the crown by the broad tawny confluent eye-stripe described.

Back: Interscapular region much like the crown, but somewhat lighter in tone, each feather with a median hair-line of black and with a very narrow margin of silvery grey or white; lower back and rump dull slate-blue, almost immaculate; upper tail-coverts barred blackish brown, slate-blue and white, with white tips and median hair-lines of black.

Tail: Deep blackish brown, crossed by six narrow pure white bars and broadly tipped with pure white; the outer rectrices often have the white tips shaded or spotted with dull tawny or pale cinnamon. Seen from beneath, the tail presents almost the same appearance, save that the blackish brown is duller.

Wings: The upper wing-coverts much like the interscapular region in color and marking; the quills brownish black, washed on the external webs with slate-blue, the internal webs barred strongly with white; the inner secondaries like the lower back and the entire series conspicuously tipped with white.

Lower parts: Chin and throat pure white, the lower neck shaded with cream, in turn becoming strong buff on the breast; the sides deep blackish brown, each feather tipped with white and crossed with four or five definite narrow pure white bars; the upper or anterior edge of this dark area meets on the mid-breast, forming a narrow band, the dark region slanting back, as it is invaded by the bright tawny rufous of the remainder of the lower parts; feathers of the thighs and legs, as well as the under tail-coverts, immaculate tawny rufous; edge of the under wing creamy buff, the rest of the under wing-coverts and axillaries barred blackish brown and white and tipped with white.

Bill: Yellow at the base, shading to blue horn on the tip; the cere orange.

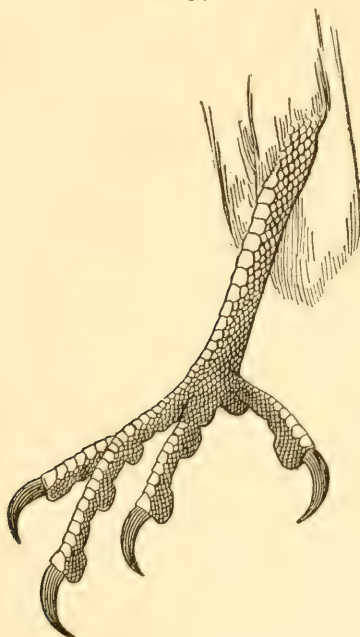
Iris deep hazel-brown.

Feet orange-yellow.

Adult female; cited above. Similar to the adult male, except that the

feathers of the breast are all decorated with tear-shaped median stripes of deep black; the black-barred region of the lower parts is confluent across the lower breast.

FIG. 340.



Falco fusco-caerulescens. Adult male, P. U. O. C. 7946. Details of foot; natural size.

This bird taken in November had evidently bred and is in very worn plumage.

Immature birds of both sexes resemble the adults. (Male, P. U. O. C., Rio Chico de Santa Cruz, Patagonia, 1 March, 1898, and female, P. U. O. C. 7901, Pacific Divide, Cordillera, Patagonia, 17 March, 1897). The white regions about the head are creamy buff; the edging of the feathers of the upper parts is tawny rufous, most conspicuous on the upper tail-coverts; the barring of the tail is obscured, particularly on the central rectrices. Beneath, the pattern is similar to that of adults; the chest and breast, however, differ much, being heavily marked with dark brown median stripes, widening toward the extremity of the feathers; the black sides do not meet definitely on the breast and the feathers are not barred with white, as in

the adults, all the feathers being fringed with tawny and some of them notched on their concealed surface with white.

Geographical Range.—From southern Texas and Arizona, south throughout the tropical and subtropical parts of Mexico, Central and South America to the Straits of Magellan; does not occur in the West Indies.

The series of the Aplomado Falcon secured by Mr. Hatcher and his co-workers attest the abundance of this bird in the extreme south of Patagonia, and being collected at different times of the year, the birds composing this set show the extremes of variation in plumage. This falcon usually selects some low bush or tree, a cactus or yucca, as a nesting site; the eggs are dull white or buffy white, thickly speckled and irregularly marked and spotted with deep shades of brown.

"This specimen was shot in a small valley on the plains of Patagonia, at Port Desire, in Lat. $47^{\circ} 44'$. It builds its nest in low bushes, and the female was sitting on the eggs in the beginning of January. Egg, 1.8 of an inch in longer diameter, and 1.4 in shorter; surface rough with white projecting points; color nearly uniform dirty "wood brown," thickly freckled with rather a darker tint; general appearance, as if it had been rubbed in brown mud. M. D'Orbigny supposed that Latitude 34° was the southern limit of this species; we now find its range three hundred and thirty miles further southward. The same author states that this falcon prefers a dry open country with scattered bushes, which answers to the character of the valleys in the plains near Port Desire." (Darwin in Gould's Zoology of Voyage of H. M. S. Beagle, Birds, p. 28, 1841.)

Genus CERCHNEIS Boie.

Type.

Cerchneis, Boie, Isis, 1826, p. 970; Sharpe, Cat. Bds. Brit.

Mus. i. p. 423 (1874); Sharpe, Hand-list Bds. i. p.

276 (1899) *C. ruficola*.

Erythropus, Brehm, Isis, 1828, p. 1270 *C. vespertina*.

Aegypius, Kaup, Natürl. Syst. p. 20 (1829, nec Savign.) *C. tinnuncula*.

Pennyschistes, Kaup, Natürl. Syst. p. 87 (1829) *C. vespertina*.

Falcula, Hodgs. J. A. S. B. 1837, p. 365 *C. tinnuncula*.

Tichornis, Kaup, Classif. Säug. u. Vög. p. 108 (1844). *C. naumanni*.

Pæcilornis, Kaup, t. c. p. 108 (1844) *C. sparveria*.

Dissodectes, Sclater, P. Z. S. 1864, p. 248 *C. dickersoni*.

Geographical Range.—The entire world except Oceania.

CERCHNEIS CINNAMOMINA (Swainson).

Falco sparverius, King (nec Linn.), Zool. Journ. III, p. 425 (1827: Port Famine); Des Murs in Gay's Hist. Chil. Zool. I, p. 227 (1847). Burm. Reis. La Plata II, p. 437 (1861: Mendoza: Tucuman); Phil. & Landb. Cat. Av. Chil., p. 4 (1868); Leyb. Excurs. Pamp. Argent., p. 52 (1873); Barrows, Auk, I, p. 110 (1884: Concepcion, spring and autumn: Bahia Blanca and along the Sierras to Carhué); Burm. Av. Mus. Nac. Buenos Aires, III, part X, p. 241 (1888: Patagonia); in part XI, p. 316 (1890: Rio Chico del Chubut); Huds. Idle Days in Patagonia, pp. 137, 138 (1893); Lataste. Actes Soc. Scient. Chil. III. p. civ (1893: Nuble, foot of Cordilleras, Nov.).

Falco cinnamominus, Swains. Anim. in Menag. p. 281 (1837); Des Murs in Gay's Hist. Chil. Zool. I. p. 226 (1847); Phil. & Landb. Cat. Av. Chil. p. 4 (1868).

Tinnunculus sparverius, Gould (nec Linn.) in Darwin's Voy. Beagle, Birds, p. 29 (1841: Rio Negro & Santa Cruz, Patagonia); Fraser, P. Z. S. 1843, p. 109 (Chili, breeds); Hartl. Naum. 1853, pp. 209; 220; Bp. Rev. et Mag. de Zool. 1854, p. 536; Scl. P. Z. S. 1867, pp. 330, 338 (Chili); id. & Salv. t. c. p. 988 (Arequipa); iid. Ibis, 1868, p. 188 (Sandy Point, Feb.); iid. P. Z. S. 1868, p. 143 (Conchitas); iid. Ibis, 1870, p. 499 (Coquimbo, July); Cunningh. Nat. Hist. Str. Magell. p. 86 (1871); Huds. P. Z. S. 1871, p. 260 (Patagonia, winter), 1872, p. 536 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 121 (1873); Lee, Ibis, 1873, p. 131 (Argent. Rep., very common); Durnford, Ibis, 1877, p. 89 (Tosca Cliff, Chupat Valley, Nov., breeding), p. 188 (Baradero, April), 1878, p. 398 (Central Patagonia, resident); Scl. & Salv. P. Z. S. 1878, p. 434 (Sandy Point, Jan.); Gibson, Ibis, 1879, p. 412 (Cape San Antonio, July & August); Durnf. Ibis, 1880, pp. 418, 428 (Tucuman, May & June); Scl. & Salv. Voy. Chall. II. Birds, p. 104 (1880: Sandy Point: Elizabeth Island, Jan.); Doering, Expl. al Rio Negro, Zool. p. 51 (1882: abundant in all parts of the country visited); White, P. Z. S. 1882, p. 623 (Fuerte Andalgala, Catamarca, Sept.); Vincig. Boll. Soc. Geogr. Ital. (2) ix. p. 797 (1884).

Tinnunculus cinnamominus, Gray, Gen. B. I. p. 21 (1844); Gurney, Ibis, 1881, pp. 547-556; id. List Diurn. B. Prey, p. 99 (1884); Scl. & Huds. Argent. Orn. II. p. 69 (1889); James, New List Chil. B. p. 7 (1892); Aplin, Ibis, 1894, p. 195 (Uruguay); Salvad. Ann. Mus.

- Genov. (2) xx. p. 615 (1900: Penguin Rookery, Feb.; Gregory Bay, April); Albert, Contr. Estud. Av. Chil. ii. p. 546 (1901).
- Tinnunculus cinnamomeus*, Bp. Consp. Av. I. p. 27 (1850: Chili and Patagonia); Hartl. Naum. 1853, pp. 209, 220; Vincig. Exped. Austr. Arg. p. 58 (1883); id. Exped. Patag. p. 59 (1883); Salv. P. Z. S. 1883, p. 426 (Chili); Withington, Ibis, 1888, p. 470 (Lomas de Zamora, not observed breeding); Holland, Ibis, 1890, p. 425 (Estancia Espartilla; Frenzel, J. f. O. 1901, p. 114 (Córdoba); Graham Kerr, Ibis, 1892, p. 204 (Estancia Espartilla, arrive in May and depart in August); Lane, Ibis, 1897, p. 180 (Arauco: Rio Bueno: Llanquehui).
- Pœcilornis cinnamominus*, Bp. Rev. et Mag. de Zool. 1854, p. 537.
- Tinnunculus sparverius* var. *cinnamominus*, Ridgw. Proc. Acad. Nat. Sc. Philad. 1870, p. 149; Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 37, 324 (1891: Punta Arenas and Agua Fresca, Jan., Feb.).
- Tinnunculus sparverius* var. *australis*, Ridgw. tom. cit. p. 149.
- Cerchneis cinnamomina*, Sharpe, Cat. B. Brit. Mus. I. p. 439 (1874: Patagonia); id. P. Z. S. 1881, p. 10 (Coquimbo, June); Burm. An. Mus. Nac. Buenos Aires, III. part x. p. 241 (1888: Patagonia); Sharpe, Hand-list B. I. p. 278 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia).
- Falco sparverius cinnamomeus*, Ridgw. Proc. U. S. Nat. Mus. xii, p. 136 (1889: Sandy Point).
- Cerchneis sparverius cinnamomina*, Schallow, Zool. Jahrb. Suppl. p. 694 (1898: Punta Arenas, Jan.: Seneril Bay, March).
- ? *Elanus parverius*, Carbajal, La Patagonia, part II. p. 256 (1900).

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 7954. Arroyo Eke [= Arroyo Gio of Map], Patagonia, 17 April, 1898. A. E. Colburn, collector: Or. No. 343. Total length, 11.75 inches.

Wing, 7.60 inches.

Culmen, without cere, 0.50 inches; with cere, 0.70.

Tail, 5.60 inches.

Tarsus, 1.45 inches.

An immature male is a little larger; P. U. O. C. 7899 (see below). Total length 11.90; wing 8.00; tail 5.75 inches.

Adult females are larger; P. U. O. C. 7896 (see below). Length 12.30

wing 8.40; tail 5.60 inches. P. U. O. C. 7895 (see below). Length 12.40; wing 8.20; tail 5.75 inches.

Color.—Adult male cited above.

FIG. 341.



Cerchneis cinnamomina. Adult male, P. U. O. C. 7954. About one-third natural size.

Head: Forehead and region in front of eye and an indistinct eye-stripe white; crown slate-blue, each feather striped by the black shaft-stripe;¹ *a spot of deep chestnut on the after part of the crown*; a streak running behind the ear-coverts and nearly joining a black well-defined nuchal band, black; a well-defined black moustachial streak, black; ear-coverts chiefly white, as are the sides of the face.

Neck: Nuchal band defining crown black; rest of upper neck bright cinnamon; chin and upper throat white, immaculate; lower throat shaded with cinnamon.

Back: Bright cinnamon, decorated with blackish bars, varying much in different birds, in the interscapular region and on the scapulars; lower back and upper tail-coverts immaculate bright cinnamon.²

¹ The standard descriptions of *C. cinnamomina* give the crown as having no chestnut marking or spot; the series from Patagonia shows at least some trace of cinnamon or chestnut in the crown of each bird.

² These birds of both sexes, all taken in the southern part of their range, average larger than birds from farther north, so that the difference is noticeable.

Tail: Bright cinnamon, crossed by a broad subterminal band of deep black; the two central rectrices broadly tipped with cinnamon, the same in shade as the body of the tail; the other rectrices more broadly tipped with clear white; the outer rectrix has the outer web pure white and the inner web with some white area above the subterminal black band; seen from below, the tail is dull cinnamon in color, with the decorations as described above.

Wings: Upper wing-coverts dark slate-blue, spotted with round black dots, the primary series barred with black; quills black, the inner webs

FIG. 342.



Cerchneis cinnamomina. Female. P. U. O. C. 7896. Natural size.

barred with white; the secondaries are black at their bases and till near the end, a broad slate-blue area here tipped with white; the inner primaries are generally bluish near their tips and white at the tip.

Lower parts: Chin and upper throat immaculate white; the lower throat, breast and chest strongly tinged with cinnamon and the rest of the lower surface white, with a creamy tint; the sides and breast decorated with pear-shaped or tear-shaped black spots on each feather; abdomen, thighs and lower tail-coverts immaculate creamy white.¹ Bill horn-blue; feet orange-yellow; iris deep brown.

Immature and young males of the year are essentially like the adult males; the markings on the lower parts pervade the upper breast as well as the chest and sides and are more streaks than spots; the general color below is creamy white.

Adult female. P. U. O. C. 7897; 12 December, 1897; Punta Arenas, Chili. J. B. Hatcher, collector. Or. No. 13. [Breeding; W. E. D. S.]

¹Some individuals lack the cinnamon suffusion on the under parts.

Adult female. P. U. O. C. 7897. Punta Arenas, Chili, 12 December, 1897. J. B. Hatcher, collector. Or. No. 13. (This is a bird in worn breeding dress just after the nesting season, W. E. D. S.)

Head: Much like that of adult male in color and markings; there is a greater amount of chestnut on the crown in the particular bird under consideration. Sides of the face essentially as in the adult male.

Neck: Very similar to that region in the adult male; the lower throat is streaked with narrow markings of ashy brown.

Back: Interscapular region barred evenly black and dull cinnamon; lower back immaculate cinnamon; upper tail-coverts nearly clear cinnamon, or with a few subterminal blackish markings.

FIG. 343.



Cerchneis cinnamomina, foot of female, natural size.

Tail: Dull cinnamon, barred narrowly with from twelve to fourteen cross bars and a broader subterminal black band, the tips of the rectrices being broadly dull cinnamon. The barring is somewhat obscured and the cinnamon ground lighter on the lower surface of the tail.

Wing: The upper wing-coverts like the interscapular region, evenly barred black and dull cinnamon; otherwise the wing is much like that of the adult male.

Lower parts whitish, the lower neck and throat narrowly and the rest

of the under surface more broadly streaked ashy brown, which on the sides preponderates over the whitish and here the markings are often tear-shaped or sagittate in character. The belly, vent, lower tail-coverts and feathered portions of the legs immaculate dull whitish.

Female young of the year or immature females (7895, P. U. O. C. Rio Chico de Santa Cruz, Cordillera of Patagonia, 18 February, 1897, A. E. Colburn, collector, Or. No. 470; 7896, P. U. O. C. Canydon, Patagonia, 9 August, 1896, J. B. Hatcher Collector, Or. No. 107) are much like adults of the same sex; there is broader marking on the under surface and the pattern in general somewhat suffused by the unworn tips of all the feathers; this is most noticeable above.

"Female: Coquimbo, June 1879. Legs grey; feet yellow; bill blue. Stomach containing remains of birds." (Sharpe, P. Z. S. 1881, p. 10.)

Geographical Range.—South America except the extreme northeastern region (Venezuela and Guiana); Patagonia and Tierra del Fuego.

The series of sparrow-hawks procured by the Princeton naturalists at every point which they explored attests to the wide distribution of the birds in southern Patagonia. All of the birds in question show chestnut markings or a patch of chestnut on the crown; this character is at variance with the examples of this form, only two of which appear to have been Patagonian, which Dr. Sharpe has described in Catalogue of Birds, British Museum, Vol. i, pp. 440-441.

The birds breed in deserted woodpecker holes or in natural cavities in trees both on the more open plains and in the forest regions of Patagonia, in November and December according to the location; they are resident throughout Patagonia and the country about the Straits of Magellan the year round.

Cunningham, in the Natural History of the Straits of Magellan (pp. 86-87), says: "Many parrots were shot by the sportsmen on this occasion, as well as a specimen of a pretty little hawk (*Tinnunculus sparverius*) with bluish ash-coloured and rufous plumage, which we afterwards found to be common in the Strait. It is abundant in Chili, where I was told it bears the name of 'ancla,' and is, I believe, widely distributed over the American continent. It is a bold little bird, as the following incident, which occurred the same day, will show. While walking in an open space near the entrance of the woods, I suddenly heard a rustle of wings, and, on turning round to ascertain the cause, an individual of this species flew

right at me, coming within a foot of my head. It then perched on the dead branch of a tree, about a couple of yards off, and scolded at me. As I was without firearms wherewith to secure the prize, I threw some pieces of stick at it, when it made a second swoop at me, again alighting on a neighbouring tree and scolding fiercely. This manœuvre was repeated several times until I was fairly clear of the wood." (This was at Sandy Point, December 24, 1867.)

O. V. Aplin (Ibis, p. 195, 1894), states that it is "fairly common on the Rio Negro, and often seen there poised over the monte, its ringing note (like that of our kestrel, but weaker and shriller) attracting attention at once. I also used to see it in the camp there, sitting on fence-posts or an ant-hill on the look-out for large insects. On the 13th December I shot a pair in worn dress on a dead tree, rotten and broken off, and probably hollow at the top, in which I believe they were breeding. About Sta. Elena it was rare. One was reported one morning by the house-peon hovering over a hedge of cactus, etc., the resort of small birds, near where the fowls were fed; he called it the *Gavilón* and imitated its kestrel wing-beating and hovering. But the only one I secured at that camp was an adult female over its moult on the 22d April. On the 15th February I saw a pair at Las Coronas."

Order STRIGIFORMES.

Striges, Sharpe, Classif. Bds. p. 79 (1891); Pycraft, Tr. Linn. Soc. 2d ser. Zool. vii. pt. 6, pp. 223-275, pls. 24-29 (1898); Sharpe, Hand-List Bds. i. p. 280 (1899).

Family STRIGIDÆ.

Genus ASIO Brisson.

Type.

Asio, Briss. Orn. i. p. 28 (1766); Sharpe Cat. Bds. Brit.

Mus. ii. p. 225 (1875); Sharpe, Hand-list Bds.

i. p. 280 (1899) *A. otus*.

Otus, Cuvier, Leçons Anat. Comp. tabl. ii. (1799). *A. otus*.

Nyctalops, Wagler, Isis, 1832, p. 1221 *A. stygius*.

Brachyotus, Gould, P. Z. S. 1837, p. 10 *A. galapagensis*.

Pseudoscops, Kaup, Isis, 1848, p. 769 *A. grammicus*.

- Phasmoptynx*, Kaup, Isis, 1848, p. 769 *A. capensis*.
Rhinoptynx, Kaup, Contr. Orn. 1852, p. 114 . . . *A. mexicanus*.
Nisusella, Bp. Rev. et Mag. de Zool. 1854, p. 542. *A. madagascariensis*.

Geographical Range.—The whole world except Australia, Oceania, Malaysia and West Africa.

ASIO FLAMMEUS (Pontoppidan) Pallas.

La Grande Chouette, Bris. Orn. I. p. 411 (1760).

Strix flammea Pontoppidan, Danske Atlas, I. p. 617, pl. xxv. (1763: Sweden).

Strix accipitrina, Pall. Reise Russ. Reichs. I. p. 455.

Strix brachyotus, Forst. Phil. Trans. LXII. p. 384.

Otus brachyotus, D'Orb. Voy. Amér. Mérid. p. 134 (1835: Patagonia); Scl. P. Z. S. 1860, p. 384 (Falkland Islands); Abbott, Ibis, 1861, p. 152 (east Falkland Islands, scarce); Burm. Reis. La Plata, II. p. 439 (1861: Rosario); Schl. Mus. Pays Bas, II. Noctuæ, p. 3 (1862: Chili); Pelz. Reis. Novara, Vög. p. 27 (1865: Chili); Scl. & Salv. Ibis, 1868, p. 188 (Philips Bay, Fuegia, April); id. P. Z. S. 1868, p. 143 (Conchitas); Huds. P. Z. S. 1870, p. 800 (Buenos Aires); Scl. & Salv. Nomencl. Av. Neotr. p. 116 (1873); Durnf. Ibis, 1876, p. 161 (Buenos Aires, common); Ibis, 1877, p. 186, 1878, p. 396 (Tambo Point, Dec., resident, not common); Scl. & Salv. P. Z. S. 1878, p. 434 (Sandy Point, Jan.: Elizabeth Island, Jan.); Doering, Expl. Al Rio Negro, Zool. p. 49 (1882: abundant); Tacz. Orn. Pérou, I. p. 196 (1884); Huds. Natural. in La Plata, pp. 62, 66 (1892); Carbajal, La Patagonia, part II. p. 260 (1900).

Otus palustris, Gould, Voy. Beagle, Birds, p. 33 (1841: Falkland Islands: Santa Cruz, Patagonia); Fraser, P. Z. S. 1843, p. 110 (Colchagua); Hartl. Naum. 1853, p. 220 (Chili); Gould, P. Z. S. 1859, p. 94 (Falkland Islands).

Ulula otus, Des Murs in Gay's Hist. Chil. Zool. I. p. 251 (1847); Phil. & Landb. Cat. Av. Chil. p. 7 (1868).

Brachyotus cassini, Cass. U. S. Expl. Exped. p. 108 (1858).

Ulula brachyotus, Phil. & Landb. Cat. Av. Chil. p. 6 (1868).

Asio accipitrinus, Cunningh. Nat. Hist. Str. Magell. p. 200 (1871); Sharpe, Cat. B. Brit. Mus. II. p. 234 (1875: Falkland Islands); Barrows, Auk, I. p. 29 (1884: Lower Uruguay, winter); Burm. An. Mus. Nac.

Buenos Aires, III. part X, p. 242 (1888: Santa Cruz, Patagonia; Falkland Islands); Frenzel, J. f. O. 1891, p. 115 (Córdoba); Sharpe, Hand-list B. I. p. 280 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Falkland Islands and Straits of Magellan); Salvad. Ann. Mus. Genov. (2) xx, p. 615 (1900: Punta Arenas, May and June: Rio Pescado, May).

Otus (Brachyotus) brachyotus, Baird, Brewer & Ridgw. B. N. Amer. III. p. 22 (1874).

FIG. 344.



Asio flammeus. Adult male, P. U. O. C. 8693. One-third natural size. The light or buff plumage.

Asio brachyotus, Gibson, Ibis, 1879, p. 423 (Cape San Antonio, not uncommon); Scl. & Salv. Voy. Chall. II. Birds, p. 104 (1880: Sandy Point, Jan.: Elizabeth Island, Jan.); White, P. Z. S. 1882, p. 622 (Monte Grande, Buenos Aires, March, common); Withington, Ibis, 1888, p. 468 (Lomas de Zamora, very common, breeds); Scl. & Huds. Argent. Orn. II. p. 49 (1889); Holland, Ibis, 1890, p. 425 (Estancia Espartilla); James, New List Chil. B., p. 6 (1892); Holland, Ibis, 1892, p. 203 (Estancia Espartilla, fairly common throughout the year, breeds

late in Nov.); Aplin, Ibis, 1894, p. 193 (Uruguay, probably resident, not observed breeding).

Otus brachyotus var. *cassini*, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 42, 324 (1890: Oazy Harbour: Orange Bay, May).

Asio accipitrinus var. *cassini*, Schalow, Zool. Jahrb. Suppl. IV. p. 698 (1898: Cabo Espiritu Santo, East Fuegia, Feb.)

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 8693. La Plata, Argentina, August, 1898. S. Pozzi, collector.

Total length, 14.25 inches.

Wing, 12.00 inches.

Culmen, 0.60 inches.

Tail, 6.00 inches.

Tarsus, 1.75 inches.

Female birds average a little larger than males. P. U. O. C. 7879, Pacific Slope, Cordillera, Patagonia, 13 March, 1897. J. B. Hatcher, collector. Or. No. 610. Length, 15.40; wing, 12.50; tail, 6.50 inches.

FIG. 345.



Asio flammeus, showing the hairy bristles about the bill. Natural size.

Color.—Adult male cited.

General color: Ground-color throughout, pale buffy yellow, or ochraceous. Marked generally with median stripes of dark brownish, varying in width and definition.

Head: Small, inconspicuous ear-tufts above the facial disk. Eyebrows and loreal region whitish, with strong bristles having black shafts; facial disk whitish, finely striped on the outer margin with deep brown; on the inner part, around the eye, this brown pervades, the lighter color hardly

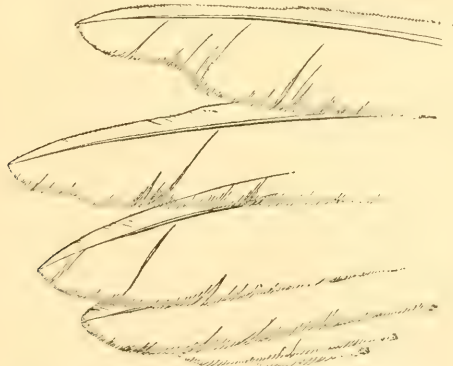
showing. Rest of the head yellowish buff, the median brown stripes on each feather being wider than the marginal buffy shade.

Neck: Above and on the sides like the head; chin and throat dirty whitish.

Back: Interscapular region and lower back with the median brown stripes as wide as the marginal buff portions of the feathers; the rump with obsolete or faint crescentic marks; upper tail-coverts nearly or quite immaculate buffy yellow.

Tail: The buffy yellow ground-color becomes lighter at the edges and ends of the rectrices; this ground-color is crossed by five or six broad brown bands equal in width to the buffy interspaces; the terminal buffy yellow band is wider than the others; the barring is most definite on the central and inner feathers, the basal ones often becoming broken or not well defined on the outer rectrices.

FIG. 346.



Asio flammeus, showing the relative length of primaries. One-half natural size.

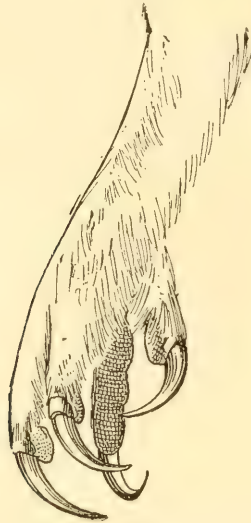
Wings: The upper wing-coverts like the interscapular region but rather darker and the markings not so regular and inclined to be more like bars than stripes; quills ruddy buff, shading to silvery at their tips, each feather being plainly and definitely checkered with brown bars, narrowest on the inner webs.

Lower parts: Chin and throat whitish, or dirty white; all the rest of the under parts buffy yellow; streaked everywhere, except on the vent, lower tail-coverts and legs, including the thighs, with narrow median stripes of deep brown on each feather; the buffy yellow areas being wider than the

dark streaks; under wing-coverts nearly white, the outer series blackish terminally, forming a characteristic spot on the almost white lining of the under wing; axillaries silvery buff.

Bill horn-blue, dark in shade.

FIG. 347.



Asio flammeus, showing the feathering of the foot. Natural size.

Feet feathered, immaculate buff in color.

Iris: Orange to lemon-yellow in varying shades.

The adults do not vary in color with the sex, the males and females being indistinguishable in this respect.

Young birds in the first plumage are generally deeper colored than are adults and more uniform as to markings.

Nestlings in the down are buff-yellow in color, darker about the face, and the quills, as soon as they develop, show the characteristic marks.

There is a wide variation in individual birds of this species and what may be termed a dark phase can be discriminated. In such the buffy areas become so rufescent as to give the general effect of a much darker bird. The plan of coloring is however the same.

Geographical Range.—Both hemispheres; tropical, temperate regions, extending in the north into the Arctic Circle, the Sandwich Islands and the

Falkland Islands. Absent in west Africa, Oceania and Australia, and not found in the Galapagos and in parts of the West Indies.

The short-eared owl was found in great numbers by the naturalists of the Princeton Expeditions, as will be seen by the appended field notes from Mr. Hatcher. The birds which were collected are all of the rufescent type or approach that form, while birds in the University collection from the plains of Argentina and north Patagonia are without exception of the lighter color, more nearly approaching Old World examples in appearance.

FIG. 348.



Asio flammeus. Adult female, P. U. O. C. 7879. Rufescent or dark plumage.
One-third natural size.

Mr. Hatcher writes: "Abundant in the open park and about the swamps in the forests in the Lower Andes, where it remains concealed during the day in the tall grass, but appearing in great numbers in the evening to feed on small rodents. Seldom seen on trees, though common along the forests. I have never observed it perching. When disturbed it always settled again on the ground in the grass and not in the woods." (Hatcher, Mss. Notes.)

Dr. Sharpe, in reviewing the fine series of this owl in the British Museum, in which he includes the bird as found in the Galapagos, now thought to be specifically distinct, gives the following summary. He concludes that there are possibly four groups into which the short-eared owl falls, these being, geographically, those of the Old World, of North and South America (including the Falkland Islands), those of the Sandwich Islands and those of the Galapagos.

"The excellent series of short-eared owls enumerated above [the list is omitted here] enables me to speak with some certainty concerning the various races which have been raised to specific distinction by various ornithologists. In the foregoing list of the specimens in the national collection I have arranged them under four headings, each form thus classified having slight peculiarities, but none of them possessing sufficient characters to allow of their being specifically separated. All over Europe and Asia there is but one type, according to my observations; but in America the general run of the specimens is rather darker and more ochraceous; hence the short-eared owl of the New World which I could not separate in the least from European examples; and in comparing specimens from the Old and New World care must be taken that birds of the same sex are examined, as the females of both are always more rufous than the males; thus if a female of the American short-eared owl were compared with a male of the European kind, the impression would be that the former was more rufous, and *vice versa*. I have seen, however, birds of both sexes from British Columbia and from Chili which were absolutely similar to British-killed specimens.

"In the Falkland Islands the short-eared owls seem permanently rufescent, but cannot be distinguished from some Chilian skins; and as some of the latter agree perfectly with European examples, no line for specific separation can be drawn: I must say, however, that at present I have never seen a light-coloured bird from the Falklands.

"The owl from the Galapagos is by far the most different of any, by reason of its small size, dark coloration, golden forehead, and striped thigh-feathers. I have never seen a specimen from any other locality exhibiting the latter character; at the same time a Bogota skin in every other respect approaches it in appearance; and therefore, although I admit that at present it would appear to be specifically distinct, I should like to be sure that the New-Granadian short-eared owl would not form a connecting link.

"The specimens from the Sandwich Islands form an interesting pair on account of locality; but they cannot be separated as a species. They are rather small, and have a very dusky frontal patch; this I have found in other Asiatic specimens; and therefore the Sandwich Island owl can only be considered a small race of *A. accipitrinus*." (Sharpe, Cat. Bds. Brit. Mus., Vol. II. pp. 238-239.)

Hudson says (P. Z. S. 1870, pp. 800-801): "The Lechuson (*Otus brachyotus*), though, like the preceding species, pretty generally distributed over the pampas, was, until within the last three years, rather a scarce bird. It breeds on the ground, makes no nest, but merely clears and presses a circular spot on the ground among the loose tussocks of long grass, and lays four white eggs of a slightly oval form. Near sunset the Lechuson is seen quitting its concealment and sitting perched upon a thistle or other eminence, or sailing above the ground with a slow heron-like flight; at intervals while flying it strikes its wings together under its breast in a very sudden, quick manner. It is not at all shy, the intrusion of a man or dog at evening in the field it frequents appearing greatly to excite its indignation. An imitation of its cry will attract numbers of them about a person; the report of a gun has the same effect. The language of this species has considerable variety; when alarmed or angry they utter a loud, sharp hiss, and at times a sudden shrill laugh-like cry. They have also a dismal hollow scream, not often heard, and at twilight hoot—this part of their vocal performance sounding not unlike the distant baying of a 'deep-mouthed' watch-dog.

"The Lechuson frequenting open plains in preference to woods, and hiding by day on the ground, has the colour of its plumage adapted to a country like the desert pampas, rough with a brown vegetation. But the introduction and increase of sheep quickly changed the aspect of a vast extent of the plain; the long brown grasses disappeared, their place being taken by a tender herbage, short and brilliant green; the country was thus unfitted for their pasture. All the wild animals have, no doubt, been greatly affected by this sudden change in vegetation and total destruction of cover. But cultivation has now partially restored the physical conditions necessary to the preservation and increase of many species like the Lechuson. In future descriptions I shall frequently refer to the changes on the pampas."

The same author writes in his Naturalist in La Plata (pp. 62-64): "In

the autumn of the year countless numbers of storks (*Ciconia maguari*) and of short-eared owls (*Otus brachyotus*) made their appearance. They had also come to assist at the general feast. . . .

"After cold weather set in the storks went away, probably on account of the scarcity of water, for the owls remained. So numerous were they during the winter that any evening after sunset I could count forty or fifty individuals hovering over the trees about the house. Unfortunately they did not confine their attentions to the mice, but became destructive to the birds as well. I frequently watched them at dusk, beating about the trees and bushes in a systematic manner, often a dozen or more of them wheeling together about one tree, like so many moths about a candle, and one occasionally dashing through the branches until a pigeon—usually the *Zenaida maculata*—or other bird was scared from its perch. The instant the bird left the tree they would all give chase, disappearing in the darkness. I could not endure to see the havoc they were making amongst the ovenbirds (*Furnarius rufus*—a species for which I have a regard and affection almost superstitious), so I began to shoot the marauders. Very soon, however, I found it was impossible to protect my little favourites. Night after night the owls mustered in their usual numbers, so rapidly were the gaps I made in their ranks refilled. I grew sick of the cruel war in which I had so hopelessly joined, and resolved, not without pain, to let things take their course. A singular circumstance was that the owls began to breed in the middle of winter. The field-labourers and boys found many nests with eggs and young birds in the neighbourhood. I saw one nest in July, our coldest month, with three half-grown young birds in it. They were excessively fat, and, though it was noon-day, had their crops full. There were three mice and two young cavies (*Cavia australis*) lying untouched in the nest.

"The short-eared owl is of a wandering disposition, and performs long journeys at all seasons of the year in search of districts where food is abundant; and perhaps these winter-breeders came from a region where scarcity of prey, or some such cause, had prevented them from nesting at their usual time in summer."

O. V. Aplin, *Ibis*, p. 193, 1894, says: "Met with at various dates continuously from the 26th November to the 7th May, and it is doubtless a resident, but I could never discover the nest. On one occasion (1st April) one hovered over some thick paja, on being flushed, with an angry

harsh, chattering or barking cry; but I was in pursuit of something else at the time, and could not find the exact spot afterwards. Those I saw and shot were like the warm-coloured form found in England."

Genus BUBO Dum.

Type.

<i>Bubo</i> , Duméril, Zool. Analyt. 1806, 34 Cuv. Règne An.	
1817, p. 331; Sharpe Cat. Bds. Brit. Mus. ii. p. 12	
(1875); Sharpe, Hand-list Bds. i. p. 282 (1899) . . .	<i>B. bubo</i> .
<i>Bubotus</i> , Rafinesque (teste G. R. Gray)	<i>B. bubo</i> .
<i>Ascalaphia</i> , Geoffr. St.-Hilaire, 1830 (teste G. R. Gray).	<i>B. ascalaphia</i> .
<i>Huhua</i> , Hodgs. As. Research, xix. p. 173 (1836) . . .	<i>B. nipalensis</i> .
<i>Heliaptex</i> , Swains. Classif. B. ii. p. 217 (1837) . . .	<i>B. arcticus</i> .
<i>Urrua</i> , Hodgs. J. A. S. B. vi, p. 372 (1837)	<i>B. bengalensis</i> .
<i>Etoglaux</i> , (pro <i>Urrua</i>), Hodgs. J. A. S. B. x. p. 28	
(1841)	<i>B. nipalensis</i> .
<i>Mesomorpha</i> (pro <i>Urrua</i>), Hodgs. l. c. p. 28	<i>B. bengalensis</i> .
<i>Aibryas</i> , Gloger, Handb. Naturf. p. 223 (1842) . . .	<i>B. arcticus</i> .
<i>Nyctætus</i> , Gloger, l. c. p. 228 (1842)	<i>B. lacteus</i> .
<i>Pseudoptynx</i> , Kaup, Isis, 1848, p. 770	<i>B. philippensis</i> .
<i>Megaptynx</i> , Bp. Rev. et Mag. de Zool. 1854, p. 542 .	<i>B. magellanicus</i> .
<i>Pachyptynx</i> , Bp. l. c. p. 542	<i>B. lacteus</i> .
<i>Nisuellæ</i> , Bp. l. c. p. 542	<i>B. maculosus</i> .
<i>Ptiloskelos</i> , Tickell, J. A. S. B. xxviii. p. 448 (1859) .	<i>B. nipalensis</i> .

Geographical Range.—The whole Western Hemisphere; the Eastern Hemisphere except the Moluccas, Australia and Oceania.

BUBO MAGELLANICUS Gmelin.

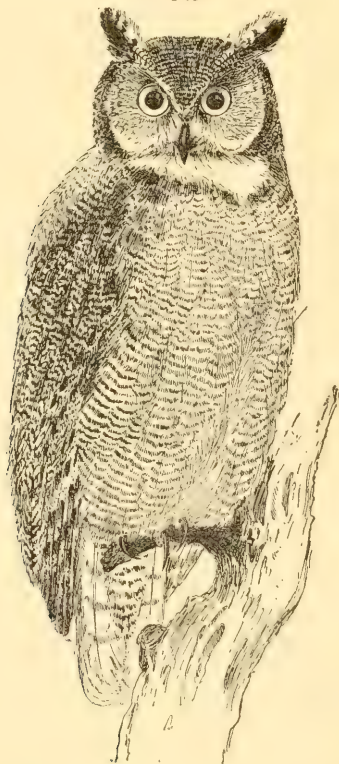
Hibou des Terres Magellaniques, D'Aubent. Pl. Enl. I. pl. 385.

Strix bubo ♂ *Magellanicus*, Gm. Syst. Nat. I. p. 286 (1788).

Bubo Magellanicus, D'Orb. Voy. Amér. Mérid. p. 137 (1835: Patagonia); Gray, List Accipitr. Brit. Mus. p. 46 (1844); Des Murs in Gay's Hist. Chil. Zool. I. p. 248 (1847); Hartl. Naum. 1853, p. 220 (Chili); Pelz. Reis. Novara, Vög. p. 26 (1865: Chili); Scl. & Salv. Ibis, 1868, p. 188 (Santiago Bay: Sandy Point, Feb. & Dec.); Sharpe, Cat. B. Brit. Mus. II. p. 29 (1875: Straits of Magellan); Durnf. Ibis, 1880, p. 361 (Salta); Sharpe, P. Z. S. 1881, p. 10 (Cape Gregory, Jan.; Port Henry, Jan.; Mayne Harbour, Jan.); Vincig. Boll. Soc. Geogr. Ital. (2) IX.

p. 797 (1884); Phil. Ornith., IV. p. 158 (1888; Ascotan, Tarapacá); Burm. An. Mus. Nac. Buenos Aires, III, part X. p. 241 (1888: Patagonia), part XI. p. 316 (1890: Deseado, March); Ridgw. Proc. U. S. Nat. Mus. xii, p. 136 (1889: Gregory Bay); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 41, 324 (1891: Orange Bay, March; Scott Isl., July; Port Desire, Dec.); Lane, Ibis, 1897, p. 177 (Vilugo, N. W. of Sacaya, breeds); Gosse in Fitzgerald's Highest Andes, App. c. p.

FIG. 349.



Bubo magellanicus. Adult female. P. U. O. C. 7949. About one-fourth natural size.

343 (1899: Punta de las Vacas); Sharpe, Hand-list B. I. p. 283 (1899); Salvad. Ann. Mus. Genov. (2) xx. p. 615 (1900: Gregory Bay, April: Punta Arenas, May; Rio Pescado, May); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Straits of Magellan).

- Nacurutu, Azara, Apunt. I. p. 192 (1802).
Strix nacurutu, Vieill. N. Dict. d'Hist. VII. p. 44 (1817: ex Azara).
Asio magellanicus, Less. Man. d'Orn. I. p. 116 (1828); Oberholzer, Proc. U. S. Nat. Mus., xxvii, pp. 179, 188 (1904).
Bubo virginianus, Fraser (nec Gm.), P. Z. S. 1843, p. 110 (Chili); Hartl. Ind. Azara, p. 3 (1847); Cunningh., Nat. Hist. Str. Magell. pp. 91, 277 (1871); Huds. P. Z. S. 1872, p. 549 (Rio Negro); Scl. & Salv., Nomencl. Av. Neotr. p. 116 (1873); Doering Expl. al Rio Negro, Zool. p. 49 (1882: Choelechoel, abundant); White, P. Z. S. 1883, p. 433 (Cosquin, Córdoba, Sept.); Barrows, Auk. I. p. 29 (1884: Arroyo de Gualaguaychû); Scl. & Huds. Argent. Orn. II. p. 50 (1889); Frenzel, J. f. O. 1891, p. 115 (Córdoba); Graham Kerr, Ibis, 1892, p. 141 (Fortin Nueve); James, New List Chil. B. p. 6 (1892).
Ulula crassirostris, Des Murs in Gay's Hist. Chil. Zool. I. p. 254 (1847),
Bubo crassirostris, Burm. Reis. La Plata, II. p. 439 (1861: Mendoza); Vincig. Boll. Soc. Geogr. Ital. (2) IX. p. 797 (1884); Carbajal, La Patagonia part II. p. 260 (1900).
Bubo virginianus var. *magellanicus*, Baird, Brewer and Ridgw. B. N. Amer. III. p. 61 (1874).

GENERAL DESCRIPTION.

Size.—Adult male, 7949, P. U. O. C. Arroyo Eke, Patagonia, 14 May, 1898. A. E. Colburn, collector.

Total length, about 18.00 inches.

Wing, 12.00 inches.

Tail, 8.00 inches.

The adult female is larger than the male, but similar in color; length about 20.00; wing 13.50; tail 8.50 inches.

Color.—Adult male cited above.

General color: Black, white and buff, as well as brown in varied and modified pattern and shade; vermiculated and indistinctly barred above; narrowly and regularly barred below.

Head: With distinct and prominent ear-tufts about an inch and three-quarters long; facial disk white, varied with dull buff and dusky, the feathers with hair-like black shafts; about the bill and lower part of facial disk many stiff black hairs; eyelid black; facial disk defined by a clear black band, starting in front of the eye and passing above; it becomes broader on the posterior margin of the disk and again narrows at the

bottom anteriorly as it approaches the base of the bill; lores and feathers in front of eye nearly or quite white; top of head dull seal-brown, the feathers tipped, margined and partially barred with white and buffy white, the whole crown having a barred pattern; ear-tufts black, with broad anterior margins to the feathers, white or buffy white.

FIG. 350.



Bubo magellanicus. P. U. O. C. 7949. Natural size. Details of facial disk, ear, bill and eye.

Neck: Above much like the crown of head; the sides lighter, the feathers dull isabelline, barred and with narrow median streaks of dusky; the throat pure silvery white, defined anteriorly by the ruff of the facial disks and posteriorly by a more or less distinct dusky band nearly an inch wide in some birds, but more frequently not more than a third of an inch.

Back: Interscapular region, lower back and rump like the crown in general color, but with more buff prevailing; the feathers are vermiculated with the three colors, white silverying the whole so as to shade the entire upper surface; the feathers on the rump and upper tail-coverts are inclined to be definitely barred and not vermiculated.

Tail: The two central rectrices dull seal-brown, strongly vermiculated with silvery and buffy white, the brown presenting toward the base of the feathers bar-like pattern; the remaining rectrices, seen from above, are distinctly buffy, shading to white at the outer edges and crossed by five or

more bars of dull seal-brown; seen from below, the tail appears nearly white, with little or no buff tint, and crossed by seven bars of dull seal-brown.

FIG. 351.



Bubo magellanicus. Female, P. U. O. C. 7949. One-half natural size. Emargination and relative length of quills.

Wings: Primaries buffy white; the outer exposed webs marked with alternating quadrate areas, dull seal-brown and pale buffy white; the inner webs more distinctly buff and barred with narrower markings of dull seal-brown; the outer secondaries much like the primaries and the inner ones with the barring undefined and not precise; upper wing-coverts like the back; lower wing-coverts creamy white or buffy white, barred with dull seal-brown in narrow bands; the outer series dull seal-brown, forming a wing-spot, conspicuous from below in the flying bird; axillaries like the lower wing-coverts; the effect of the whole wing, as seen from beneath, is light buffy white, the feathers tipped with dull seal-brown and crossed by seven definite bars of the same shade.

Lower parts: Throat and under-neck as described; a collar of dark feathers below the white throat; breast, chest, sides and flanks dull white or buffy white narrowly and closely barred with dull seal-brown; the abdomen about the vent and the thighs more distinctly buff and generally immaculate or nearly unmarked; the lower tail-coverts dull white or buffy white, with narrow seal-brown bars.

Bill: Horn-blue.

Iris: Lemon-yellow to orange.

Feet: Feathered as shown in the cut.

FIG. 352.



Bubo magellanicus. Adult female, P. U. O. C. 7949. Natural size.
Showing the feathering of foot.

Female adult: The female adult is colored like the male, but is appreciably larger.

Fully feathered young birds and young of the year are not to be distinguished from adults by their plumage.

Downy young: The downy young vary from pure cotton-white to dull buffy white.

Geographical Range.—Southern South America, from southern Brazil and southern Peru, southward to the Straits of Magellan; all Patagonia, and Tierra del Fuego.

The Magellanic Horned Owl was found by the Princeton naturalists at all points where they explored Patagonia and birds from the sea coast, as well as examples from the Cordillera, were brought back in the collections. This fine series, as well as the birds in the British Museum and those in the Museum of the Jardin des Plantes, form the basis for the descriptions here given.

There is very considerable variation presented by birds from the several localities where they were obtained, which, independent of age, the season of the year or sex, show two well defined extremes, which seem to correlate fairly well with the habitat of the two forms. Birds from the Straits of Magellan, from Tierra del Fuego and from the southeastern coast of Patagonia are notably greyer and decidedly more silvery than are those from northern Patagonia, the Rio Negro region, or from the Cordillera of Patagonia; from both these latter regions the birds are much more shaded with buff, especially on the upper surface, while some individuals taken at Arroyo Eke in the interior and at Rio Gallegos near the coast, are wholly deficient in the prominent buff tint that characterizes the other birds.

In the P. Z. S. 1881, p. 10, Dr. Bowdler Sharpe describes some specimens of this owl as follows:

"Male: Cape Gregory, Straits of Magellan, January 1879. Irides golden yellow; horns prominent; claws black.

"Female: Port Henry, Straits of Magellan, January 28, 1879.

"Male: Mayne Harbour, Straits of Magellan, January 1879.

"The female is a much darker bird than the male, suggesting almost the possibility of its being in melanistic plumage; the general aspect of the upper surface is almost uniform; and the centre tail-feathers have no cross bars at all. In the male the light cross bands are seven in number, without counting the whitish apical band."

E. W. White (P. Z. S. 1883, p. 433) says: "This bird was brought to me alive, and I managed to keep it for some time: in fact they soon become very tame and tractable, some of the natives keeping them as pets loose about the farmyard. There are a few to be met with in this valley; and once I went a journey of some distance with a friend to the roosting-place of a pair in the highlands near the mountain-ravines; he told me that he had often observed them in some large Algarroba trees.

"Our visit was fruitless, but we had ample evidence of their having been there lately. The local name for this Owl is 'Quitilipe,' evidently given it from its peculiar hooting."

Cunningham (Nat. Hist. Str. Magell. 1871, 91) says of this species: "While we were engaged in looking for a place to cross a stream with the intricate windings of which it took some experience to become acquainted, a large owl was discovered perched on the branch of a neighbouring tree, and shot. It proved to be a fine specimen of the *Bubo Magellanicus*, a species which, I am informed by Mr. Sclater, ranges over nearly the whole extent of North and South America, being identical with the well-known Virginian Horned Owl. We were struck with the cat-like appearance which its great yellow eyes communicated to its countenance. The plumage of this species, which sometimes exceeds two feet in length, is beautifully mottled with a variety of shades of black, brown, and grey. In the Straits of Magellan, besides occurring in the wooded districts, it is far from rare in the open country, where it sometimes may be seen perched on the barberry bushes, or sailing quietly along on the lookout for its prey, which consists in great measure of rodents of various species." (Sandy Point, December, 1866.)

Again (p. 277) he writes: "In the neighbourhood of these warrens I noticed a good many specimens of the great owl (*Bubo Magellanicus*). These were in general perched on the barberry bushes, and were very bold, barking at me in their peculiar fashion, and allowing me to come within three or four yards of them before taking flight." (Gregory Bay, December, 1868.)

Hudson (Idle Days in Patagonia, pp. 190-193) writes: "Nature has many surprises for those who wait on her; one of the greatest she ever favoured me with was the sight of a wounded Magellanic eagle-owl I shot in Patagonia. The haunt of this bird was an island in the river, overgrown with giant grasses and tall willows, leafless now, for it was in the middle of winter. Here I sought for and found him waiting on his perch for the sun to set. He eyed me so calmly when I aimed my gun, I scarcely had the heart to pull the trigger. He had reigned there so long, the feudal tyrant of that remote wilderness! Many a water-rat, stealing like a shadow along the margin between the deep stream and the giant rushes, he had snatched away to death; many a spotted wild pigeon had woke on its perch at night with his cruel crooked talons piercing its flesh;

and beyond the valley on the bushy uplands many a crested tinamou had been slain on her nest and her beautiful glossy dark green eggs left to grow pale in the sun and wind, the little lives that were in them dead because of their mother's death. But I wanted that bird badly and hardened my heart; the 'demoniacal laughter' with which he had so often answered the rushing sound of the swift black river at eventide would be heard no more. I fired; he swerved on his perch, remained suspended for a few moments, then slowly fluttered down. Behind the spot where he had fallen was a great mass of tangled dark-green grass, out of which rose the tall, slender boles of the trees; overhead through the fretwork of leafless twigs the sky was flushed with tender roseate tints, for the sun had now gone down and the surface of the earth was in shadow. There, in such a scene, and with the wintry quiet of the desert over it all, I found my victim stung by his wounds to fury and prepared for the last supreme effort. Even in repose he is a big eagle-like bird; now his appearance was quite altered, and in the dim, uncertain light he looked gigantic in size—a monster of strange form and terrible aspect. Each particular feather stood out on end, the tawny barred tail spread out like a fan, the immense tiger-coloured wings wide open and rigid, so that as the bird that had clutched the grass with his great feathered claws, swayed his body slowly from side to side—just as a snake about to strike sways his head, or as an angry, watchful cat moves his tail—first the tip of one, then of the other wing touched the ground. The black horns stood erect, while in the centre of the wheel-shaped head the beak snapped incessantly, producing a sound resembling the clicking of a sewing machine. This was a suitable setting for the pair of magnificent furious eyes, on which I gazed with a kind of fascination, not unmixed with fear, when I remembered the agony of pain suffered on former occasions from sharp, crooked talons driven into me to the bone. The irides were of a bright orange colour, but every time I attempted to approach the bird they kindled into great globes of quivering yellow flame, the black pupils being surrounded by a scintillating crimson light, which threw out minute yellow sparks into the air. When I retired from the bird this preternatural fiery aspect would instantly vanish.

"The dragon eyes of that Magellanic owl haunt me still, and when I remember them, the bird's death still weighs on my conscience, albeit by killing it I bestowed on it that dusty immortality which is the portion of stuffed specimens in a museum."

Genus STRIX Linn.

- | | |
|---|----------------------|
| | Type. |
| <i>Strix</i> , Linn. Syst. Nat. Ed. X. I. p. 92 (1758) | <i>S. aluco</i> . |
| <i>Syrnium</i> , Savign. Descr. Egypte, p. 298 (1809); Sharpe, Cat. | |
| Bds. Brit. Mus. ii. p. 244 (1875); Sharpe, Hand-list Bds. | |
| i. p. 293 (1899) | <i>S. aluco</i> . |
| <i>Uhula</i> , Cuvier, Regn. Anim. i. p. 329 (1817) | <i>S. uralense</i> . |
- Geographical Range*.—The whole world except Madagascar, the Austro-Malayan subregion, Australia and Oceania.

STRIX RUFIPES King.

- Strix rufipes*, King, Zool. Journ. III. p. 426 (1827: Port Famine).
- Uhula rufipes*, Darw. Voy. Beagle, Birds, p. 34 (1841: Tierra del Fuego);
Des Murs in Gay's Hist. Chil. Zool. I. p. 251 (1847); Phil. & Landb.
Cat. Av. Chil. p. 7 (1868).
- Uhula fasciata*, Des Murs in Gay's Hist. Chil. Zool. I. p. 252 (1847); id.
Iconogr. Orn. pl. xxxvii.
- Syrnium rufipes*, Gray, Hand-list B. I. p. 48, No. 508 (1869); Scl. & Salv.
Nomencl. Av. Neotr. p. 116 (1873: Patagonia); Sharpe, Cat. B. Brit.
Mus. II. p. 261 (1876: Port Famine and Straits of Magellan); Burm.
An. Mus. Nac. Buenos Aires, III. part X. p. 242 (1888: Straits of
Magellan), part XI. p. 316 (1890: Valley of Deseado); Oust. Miss.
Scient. Cap Horn, Oiseaux, pp. 254, 324 (1891); James, New List
Chil. B. p. 6 (1892); Schalow, Zool. Jahrb. Suppl. IV. p. 697 (1898:
Sene Almirantazgo, Fuegia, Jan.); Sharpe, Hand-list B. I. p. 294
(1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia:
Straits of Magellan: Fuegia).

GENERAL DESCRIPTION.

- Size*.—Adult male, 7881, P. U. O. C. Rio Chico, Cordillera, Patagonia,
25 February, 1897. J. B. Hatcher.
Total length, about 15.50 inches.
Wing, 10.00 inches.
Tail, 6.00 inches.

The female does not differ in color from the male, but is larger; 7882,
adult female (presumably mate of male cited), from same locality, collected
the same day, length about 16.90; wing 11.40; tail 7.25.

Color.—Adult male cited above.

General color: Dark seal-, or chocolate-brown, clear buff and pure white.

FIG. 353.



Strix rufipes. Adult male, P. U. O. C. 7881. About one-fourth natural size.

Head: Round and without ear-tufts. Top of the head barred with distinct white bars on a chocolate-brown ground, each feather with concealed, underlying bars of clear deep buff; facial disk greyish white, obscured by brownish black in front of the eye, by tawny buff below the eye, and by obsolete concentric bars, five in number, clearest on the outer and lower rims, of dusky brown; loral plumes silvery white, the shafts developing into stiff hair-like bristles about the beak; the facial ruff bordering the disk, chocolate-brown, with tips and marginal marks to the feathers deep clear buff; eyelids dusky black.

Neck: The back of the neck like the top of the head, but with the white bars broader; the chin white or whitish; the throat and lower neck barred white and chocolate-brown, the white bars subterminal, and a second buffy-white bar after a brown one.

Back: Chocolate-brown, barred with subterminal white bars which are conspicuous, and with deep buff bars more or less concealed; the rump and upper tail-coverts show the buff bars not hidden as on the interscapular region.

FIG. 354.



Strix rufipes. Adult male, P. U. O. C. 7881. Details of head. Natural size.

Tail: From above, chocolate-brown, with a terminal white band, and crossed by eight deep bars of buff half as wide as the brown intervals; from below, silvery grey, the buffy bars being isabelline and the brown intervals deep ash.

Wings: Primaries deep chocolate-brown; the outer webs with quadrate brown spots interrupted with buff bars on the first and the inner quills, the second, third, fourth and fifth with most of the barring distinctly white; the secondaries barred brown and buff, with little or no indication of white; the median and greater series of upper wing-coverts very distinctly barred with buff and notched with white on their external webs; the lesser upper wing-coverts with the barring quite obsolete; the primary coverts clear uniform chocolate-brown, making a spot; lower wing-coverts yellowish, barred obscurely with dusky; axillaries the same shade, but distinctly barred.

Lower parts: Breast and chest barred narrowly and evenly brown and white, the white bars being subterminal and there are two white bars and

a concealed buff one on each feather; on the rest of the under surface the white bars are broader than the brown ones and the buff bars are not fully concealed, but giving a buff tone or wash to this region; leg-feathers

FIG. 355.



Strix rufipes. Detail of wing, reduced.

deep buff and silky in quality, as well as immaculate; the under tail-coverts dirty or buffy white, with subterminal bars of dusky; there are frequently two dusky bars, but as often only one on these feathers.

Bill: Horn-blue. Iris: Dull blue (Hatcher). Feet feathered. The sexes are alike in color and the young of the year and immature birds do not differ greatly from the old ones.

Geographical Range.—Tierra del Fuego, Chili and Patagonia as far north as 44° south latitude.

The Patagonian Barred Owl does not appear to be a widely distributed form; it has been recorded from several points in Tierra del Fuego, where it is a resident bird, and from there north to the Valley of the Rio Deseado, about the northern boundary of the province of Santa Cruz. Darwin secured the bird on one of the extreme southern islands of Tierra del Fuego and the bird has been found breeding in central Chili. Mr.

Hatcher collected the pair of birds used as a basis for the descriptions given above, in the Cordillera at the upper waters of the Rio Chico de Santa Cruz, late in February. The birds seem to be rather rare even where they occur, no large representation, as in the case of *Bubo magellanicus*, being recorded from any locality.

FIG. 356.



Strix rufipes. Detail of feathering of foot and toes. Natural size.

Genus SPEOTYTO Gloger.

Type.

Speotyto, Gloger, Handb. Naturg. p. 226 (1842); Sharpe,

Cat. Bds. Brit. Mus. ii. p. 142 (1875); Sharpe, Hand-

list Bds. i. p. 297 (1899) *S. cunicularia*.

Pholeoptynx, Kaup, Isis, 1848, p. 769 *S. cunicularia*.

Geographical Range.—Western North America, east to the great plains, and south through middle America to Guatemala; southern Florida; Central and all of South America.

SPEOTYTO CUNICULARIA (Molina).

La Chouette de Coquimbo, Briss. Orn. I. p. 525 (1760).

Coquimbo Owl, Lath. Gen. Syn. I. p. 145 (1781).

- Strix cucularia*, Molina, Hist. Nat. Chil. p. 343 (1782); Gm. Syst. Nat. I. p. 292 (1788); Vieill. N. Dict. d'Hist. Nat. VII. p. 35 (1817).
- Urucurea*, Azara, Apunt. I. p. 214 (1802).
- Strix grallaria*, Spix Av. Bras. I. p. 21 (1824).
- Noctua cucularia*, Darw. Journ. Nat. Beagle, p. 145 (1832-36); D'Orb. Voy. Amér. Mérid. p. 128 (1835: Patagonia); Des Murs in Gay's Hist. Chil. Zool. I. p. 245 (1847); Burm. J. f. O. 1860, p. 143; id. Reis. La Plata, II. p. 440 (1861); Schl. Mus. Pays Bas. Striges, p. 30 (1862); Durnf. Ibis, 1877, p. 38 (Chupat Valley, breeding); id. Ibis, 1878, p. 397 (Valleys of the Sengel and Sengelen); Doering, Expl. al Rio Negro, Zool. p. 49 (1882: Rio Colorado and Rio Negro).
- Noctua urucurea*, Less. Traité d'Orn. p. 104 (1831).
- Athene cucularia*, Darw. Voy. Beagle, Birds, p. 31 (1841: Rio Negro); Fraser, P. Z. S. 1843, p. 109 (Chili); Hartl. Ind. Azara, p. 4 (1847); id. Naum. 1853, p. 220 (Chili); Pelz. Reis. Novara, Vög. p. 25 (1865: Chili); Darw. Natural. Voy. Beagle, pp. 70, 125 (1882).
- Pholeoptynx cucularia*, Scl. & Salv. Ibis, 1868, p. 188 (Cape St. Vincent: Fuegia, April); iid. P. Z. S. 1868, p. 143 (Conchitas); iid. Nomencl. Av. Neotr. p. 117 (1873); Lee, Ibis, 1873, p. 131 (Argentine Republic); Huds. P. Z. S. 1874, p. 308 (Buenos Aires); Durn. Ibis, 1876, p. 161 (Buenos Aires, abundant May to Sept.), 1877, p. 186 (Baradero, April, common); Gibson, Ibis, 1879, p. 423 (Cape San Antonio, breeds Oct. to Dec.); Durnf. Ibis, 1880, p. 416 (Tucuman, May); White, P. Z. S. 1882, p. 622 (Pilciao, Andalgala, Catamarca, Sept. breeds; Salto, Oct.: Concepcion, Misiones, June): Tacz, Orn. Pérou, I. p. 174 (1884); Huds. Natural. in La Plata, p. 298 (1892).
- Speotyto cucularia*, Sharpe, Cat. B. Brit. Mus. II. p. 142 (1875); id. P. Z. S. 1881, p. 10 (Coquimbo, June); Barrows, Auk, I. p. 30 (1884: Concepcion, abundant June); Burm. An. Mus. Nac. Buenos Aires, III. part x. p. 242 (1888: Northern Patagonia); Withington, Ibis, 1888, p. 469 (Lomas de Zamora, breeds); Scl. & Huds. Argent. Orn. II. p. 52 (1889: Patagonia, abundant); Holland, Ibis, 1890, p. 425 (Estancia Espartilla, very common); Frenzel, J. f. O. 1891, p. 115 (Córdoba); James, New List Chil. B. p. 6 (1892); Holland, Ibis, 1892, p. 203 (Estancia Espartilla, abundant resident, breeds early in Oct.); Aplin, Ibis, 1894, p. 193 (Uruguay, breeds Dec. to Feb.); Lane, Ibis,

1897, p. 178 (Cordilleras of Tarapacá up to 10,000 feet); Sharpe Hand-list B. I. p. 297 (1899); Martens, Hamb. Magalh. Sammlr. p. 6 (1900); Carbajal, La Patagonia, II. p. 260 (1900).

Athene (Speotyto) cunicularia, Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 44, 324 (1891: Salinas, Patagonia).

FIG. 357.



Speotyto cunicularia. Adult male, P. U. O. C. 7915. About half natural size.

GENERAL DESCRIPTION.

Size.—Adult male, 7915, P. U. O. C. Rio Chico de Santa Cruz, Patagonia, 5 March, 1898. A. E. Colburn, collector.

Total length, 8.9 inches.

Wing, 6.8 inches.

Tail, 3.6 inches.

The female is like the male in color and appearance, but noticeably larger. Adult female, 7914, P. U. O. C. Rio Chico de Santa Cruz, Patagonia, 5 March, 1898. A. E. Colburn, collector. Length 10.00; wing 7.30; tail 3.9 inches.

Color.—Adult male cited above. General color dull ash-brown, spotted or marked with white or buffy or ashy white.

Head: Crown and top of head dull ash-brown, each feather with a tear-shaped buffy white spot and the feathers of the occiput with transverse bars of the same color; lores and a narrow eyebrow clear white; the feathers

of the lores with stiff, prolonged, black, hair-like shafts obscuring the white color; ear-coverts, forming the posterior part of facial disk, ash-brown, fulvescent just back of the eye; the facial disk not well defined, but brokenly separated from the crown by the white eyebrow and a crescentic white patch back of the ear-coverts.

FIG. 358.

*Speotyto cunicularia.* Bill and nostril, natural size.

Neck: Back of the neck ash-brown, like the crown, but each feather with a broad subterminal white bar or spot, giving the whole about an evenly mottled appearance; chin white; throat white; the two regions separated by a band of buffy brown feathers.

Back: Interscapular region ashy brown, mottled white, or ashy white spots and bars on all the feathers; the bars are concealed and deeper ashy white, or even buff, as compared with the spots; the lower back, rump and upper tail-coverts similar, but with the buffy barring not concealed.

Tail: Concolor with the back, with a terminal band of buffy white, and crossed by five or more bands of a similar shade, the interval of ground-color being wider than the buffy bars and shaded toward the edges, touching the buffy white with deeper shades of umber-brown; the inner webs of all but the central feathers with white greatly preponderating; from below, the closed tail appears silvery white, with pale ashy brown cross bars.

Primary wings: Quills clear ash-brown at the tips, deeply notched on the inner webs, with white and broad white notches prevailing on the outer webs; secondaries with white tips, barred on the outer webs with buffy white, immaculate silvery nearly to the exclusion of any brown; scapulars like the back; the upper wing-coverts spotted regularly with buffy white, more conspicuously on the greater and median series; under wing-coverts and axillaries silky, silvery white.

Lower parts: Breast, chest and fore part of abdominal region barred rather evenly brown and buffy white, the feathers of the breast with the brown shade prevailing, those of the fore part of the abdomen with the

white or buffy white strongest, and finally the vent and lower abdomen, as well as the under tail-coverts and the feathered portion of the legs, clear, immaculate silvery white, silky in appearance.

Bill: Yellowish, shading into dusky at the base.

Iris: Orange-yellow.

FIG. 359.



Speotyto cunicularia. Emargination of primaries. Natural size.

Feet: The toes bare and with short hairy covering above, the tarsus feathered, except beneath, where it is yellowish green.

The female cited taken on the same day and in the same region is larger than the male and very similar in appearance except that the dark color is stronger on the under surface, the chest, breast and fore-abdomen.

Both birds have evidently only shortly completed the moult and are in exceptionally fine unworn plumage; the suffusion of the colors of the lower parts by the whitish filamentous tips of the feathers is marked.

Young birds of the year and immature individuals from this region have not come under notice, but presumably are like the well known stages of the same age in the congeneric forms prevailing throughout all of South and the western part of North America.

Geographical Range.—South America, from southern Patagonia to Central America in open plain-like country.

On page 121 of his narrative, Mr. Hatcher speaks of this little owl as one of the features of the regions traversed by the Princeton Expeditions, wherever the character of the country was suitable. The birds are per-

haps of all the owls the most diurnal in their habits and extracts from those who have met with them are appended, telling of the life and breeding habits.

O. V. Aplin (Ibis, 1894, pp. 193-194) says that the burrowing owl was "common, breeding in the open camp, but usually at no great distance from a group of rocks, on which, and the stunted shrubs among them, they like to sit. The burrows are sometimes in the open ground, sometimes at the foot of, or partly underneath, a boulder. This little owl is 'brava.' Upon any intrusion on its haunts it launches itself into the air and hovers like a kestrel, uttering loud, sharp, rapid, hawk-like cries, and often it will swoop down in a menacing way. With a dog they are especially fierce. I have known a bird repeatedly strike at an old terrier which used to accompany me on shorter excursions, to his great irritation and disgust. The owl would sail gently along, and as it passed over his back (always approaching from the rear), just drop its legs and claw his back, or even his ears. The old dog used to spring up into the air with angry barks and snaps at his tormentor—by that time safe up aloft again. Although the pluckiest dog alive, he could not deal with this aerial enemy, and used to come at last to my feet to escape the annoyance. I have, as it grew dusk, known the owl to strike him when he was only four or five paces from where I stood. Some broods were hatched before and about Christmas (I saw fledged young in the nest at the Rio Negro on the 18th December), and early in February the whole family used to sit about on the rocks, bushes, or camp. The young numbered from two to five. But some appeared to be nesting (again?) at that date, and I knew of one place where there were four used kennels close together. The mouths of the kennels are strewn with the remains of small reptiles, beetles, locusts, etc. The owls do much good by eating the isoca beetles, remains of great numbers being found; most of them are the females. When the owls eat the male beetles they snip off and reject the thorax with its powerful horns; this part is not found in the pellets, but lying separate. The call of this owl is '*coc-coquoi*' or '*coc-co-woy*,' the last syllable drawn out; sometimes it is '*cocquoi-o*.' This calling takes place at sundown, when you can hear the owls all about the camp. The serenade over, they begin to feed in earnest (for though they sit about outside and are quite at ease all day, they feed chiefly after sundown), often hovering like kestrels over the camp and about the trees and plantations of the quinta. Sometimes they scream harshly at night."

Hudson gives an excellent account of the species (P. Z. S. 1874, pp. 308-311): "The Burrowing Owl is abundant everywhere on the open level pampas of the Argentine Republic, and avoids woods but not districts abounding in scattered trees and bushes.

"It sees better than other Owls by day, and never affects concealment, nor appears molested by diurnal sounds and the glare of noon. When a person passes near one it stares fixedly at him, following him with the eyes, the round head turned about as on a pivot. If closely approached, it drops its body in a somewhat playful fashion, emitting a brief scream, followed by three abrupt ejaculations, and if made to fly, goes but fifteen or twenty yards off, and alights again with face towards the intruder; and no sooner does it alight than it repeats the gesture and scream, standing stiff and erect, and appearing beyond measure astonished at the intrusion. By day it flies near the surface with wings continuously flapping, and seldom goes far, and invariably before alighting glides suddenly upwards for some distance and comes down abruptly. It frequently runs rapidly on the ground, and is incapable of sustaining flight long. Gaucho boys pursue them for sport on horseback, taking them in fifteen or twenty minutes. They live in pairs all the year, and sit by day at the mouth of the burrow or on the Vizcacha's mound, the two birds so close together as to be almost touching; when alarmed they both fly away, but sometimes the male only, the female diving into the burrow. Their sitting on the ground may be more from necessity than choice, as they usually perch on the summits of bushes where such abound.

"These are the commonest traits of the Burrowing-Owl in the settled regions, where it is excessively numerous and familiar with man; but in the regions hunted over by the Indians it is scarce, and in some of its habits quite a different bird. Shy of approach as a persecuted game-fowl, it rises to a considerable height in the air when the approaching traveller is yet far off, and flies often beyond sight before descending again to the earth. This wildness of disposition is, without doubt, traceable to the active animosity of the pampa tribes, who have all the ancient widespread superstitions regarding the Owl. Sister of the Evil Spirit is one of their names for it. They hunt it to death whenever they can, and, when travelling, will not stop to rest or encamp on the spot where an Owl has been seen. As soon as the plains are settled by whites, the bird drops this wary habit, and becomes exceedingly tame. They are also

tenacious of the spot they live in, and are not, like the Pipit and Spurred Lapwing, driven out by cultivation. When the fields are ploughed up, they burrow on the borders of the ditches, and sit on the wayside fences, and are so tame that a rider can easily knock them down with his whip. Several pairs live near my house; and when a person rides up to within three or four yards of a burrow the birds only snap and hiss and ruffle up their feathers, refusing to fly away.

"Occasionally the owls are seen preying by day, especially when anything passes near, offering the chance of an easy capture; often I have amused myself throwing bits of earth near one as it sat by its kennel; for the bird will immediately give chase, only discovering its mistake when the stone is firmly clutched in its talons. When rearing their young they are perhaps quite as active by day as by night. On the hot days of November multitudes of two large species *Scarabæus* appear; and the bulky bodies and noisy bungling flight of these beetles invite the owls to pursuit; and on every side they are seen chasing and striking down the beetles, and tumbling upon them in the grass. Owls have a peculiar manner of taking their prey: they grapple it so tightly in their talons that they totter and strive to steady themselves by throwing out their wings this way and that, and, often losing their balance, fall prostrate, and flutter on the ground. If the animal captured be small, they proceed after a while to dispatch it with the beak; if large, they usually rise laboriously from the earth, and fly to some distance with it, thus giving time for the wounds inflicted with their claws to do their work.

"How remarkable it is that the *Tænioptera* (so different in structure from owls) should resemble them in the peculiar manner of seizing their prey!

"The *Tænioptera* frequently darts upon a large insect on the ground, and, grasping it with its feet, flutters and totters precisely like an owl. This habit I have observed in four species of *Tænioptera*.

"At sunset the Burrowing Owls begin to hoot; a short followed by a long note is repeated many times, with an interval of a second of silence. There is nothing dreary or solemn in this preformance; but it is rather soft and sorrowful, somewhat resembling the lowest notes of the flute in sound. In spring they hoot a great deal, many birds responding to each other.

"In the evening they are often seen hovering at a height of forty yards

above the surface, and continuing a minute or longer without altering their position. They do not drop the whole distance at once on their prey, but descend vertically, tumbling and fluttering, as if wounded, to within 10 yards of the earth, and then, after hovering a few seconds more, glide obliquely upon it. They prey on every living creature not too large to be overcome by them. Sometimes they sever off and leave untasted the head, tail, and feet of a mouse. The hind quarters of frogs and toads are almost invariably rejected; and inasmuch as these are the most fleshy and succulent parts, this is a strange and unaccountable habit. They make an easy conquest of a snake 18 inches long, and kill it by dealing it blows with the beak, hopping briskly about it all the time, and appearing to guard themselves with the wings. Many individuals become destructive to poultry-yards, carrying off the chickens by day. In seasons of plenty they destroy more prey than they can devour; but in severe winters they come, apparently starving, about the houses, and will then stoop to carry off any dead animal food, though old and dried up as a bit of parchment. This I have often seen them do. Though the owls are always on familiar terms with the Vizcachas, and occasionally breed in one of their neglected burrows, they generally excavate their own burrows. The kennel is crooked, and varies greatly in length, from 4 to 12 feet. The nest is at the extremity, composed of wool and dry grass, often exclusively of horse dung. The eggs are five, white, and nearly spherical. After the female has begun laying, the birds continue to carry in dry horse dung, until the floor of the burrow and a space before it is thickly carpeted with this material. The following spring the loose earth and rubbish is cleared out, for the same burrow may serve them two or more years. It is always untidy, but mostly so during the breeding season, and when prey is very abundant, the floor and ground about the entrance being often littered with excrements and pellets of hair and bones, wing-cases of beetles, and feathers, hind quarters of frogs in all stages of decay, the great hairy black spiders of the pampas, and remains of half-eaten snakes and other unpleasant creatures they subsist on. But all this carrion about the owl's disordered house reminds one forcibly of the important part assigned to it in the natural economy. The young birds ascend to the entrance of the burrow to bask in the sun and receive the food their parents bring; when approached they become irritated, snapping with their beaks, and appearing reluctant to enter the burrow; but for some weeks after learning to fly

they make it their refuge from danger. Old and young birds often live four or five months together. I believe nine-tenths of the owls in this country make their own burrows; but as they occasionally prefer breeding in the forsaken burrows of mammals to mining themselves, it is probable they would almost always observe this last habit did suitable burrows abound.

“I have never seen any complete account of the North-American form of this owl, but presume its habits are now well known, as all matters connected with science receive so much attention in that country. From such stray notices of the bird as I have met, I learn that it inhabits and invariably breeds in the kennels of the prairie-marmot. The small, neat burrows of that mammal must be far better suited to its requirements than the vast ones excavated by Vizcacha.

“Probably the burrowing owl originally acquired the habit of breeding in the earth in open level bare regions; and when this habit (favourable as it could but be in such shelterless places) had become ineradicable, a want of suitable burrows would lead it to clean out such old ones as had become half filled with rubbish, to deepen such as were too shallow, and ultimately to excavate new ones.

“In Buenos Ayres the mining instinct varies greatly in individuals. In the birds that breed in Vizcachas’ burrows the instinct is doubtless weak; they can hardly be said to possess it.

“Some pairs, long mated, only begin their burrows when the breeding season is already on them; others make their burrows as early as April—that is, six months before the breeding season. Generally both birds work, one standing by and regarding operations with an aspect of grave interest, and taking its place in the burrows when the other retires; but sometimes the female makes the kennel without any assistance from her partner. Some pairs work expeditiously, and their burrows are deep and neatly made; others go about their task in a perfunctory manner, and begin and immediately abandon perhaps half a dozen burrows, and then rest two or three weeks from their unprofitable labours. But, whether industrious or indolent, by September they all have their burrows made.

“Most, if not all, the writers who have mentioned our bird err in speaking of its burrowing habits. Azara was perhaps the first to say that it never constructs its own habitations. Molina (usually judicious) flies to the opposite extreme, and asserts, on the authority of P. Fuielle, that it

burrows to such an amazing depth in the earth, that only the incomparable zeal and industry of Fuielle himself has enabled us to know the nesting habits of the bird.

"Fuielle's profound investigations resulted in the discovery that the eggs of the burrowing owl are speckled!"

In his *Naturalist in La Plata* (pp. 298-299) the same author writes: "Standing on the mound there is frequently a pair of burrowing owls (*Pholeoptynx cunicularia*). These birds generally make their own burrows to breed in, or sometimes take possession of one of the lesser outside burrows of the village; but their favourite residence, when not engaged in tending their eggs or young, is on the vizcachera. Here a pair will sit all day; and I have often remarked a couple close together on the edge of the burrow; and when the vizcacha came out in the evening, though but a hand's breadth from them, they did not stir, nor did he notice them, so accustomed are these creatures to each other. Usually a couple of the little burrowing Geositta are also present. They are lively creatures, running with great rapidity about the mound and bare space that surrounds it, suddenly stopping and jerking their tails in a slow deliberate manner, and occasionally uttering their cry, a trill or series of quick short clear notes, resembling somewhat the shrill excessive laughter of a child. Among the grave, stationary vizcachas, of which they take no heed, perhaps half a dozen or more little swallows (*Atticora cyanoleuca*) are seen, now clinging together to the bank-like entrance of a burrow, now hovering over it in a mothlike manner, as if uncertain where to alight, and anon sweeping about in circles, but never ceasing their low and sorrowful notes." (Huds. Natur. La Plata, 1892, pp. 298-299.)

And (pp. 66-67): "By August (1873) the owls had vanished, and they had, indeed, good cause for leaving. The winter had been one of continued drought; the dry grass and herbage of the preceding year had been consumed by the cattle and wild animals, or had turned to dust, and with the disappearance of their food and cover the mice had ceased to be. The famine-stricken cats sneaked back to the house. It was pitiful to see the little burrowing owls; for these birds, not having the powerful wings and prescient instincts of the vagrant *Otus brachyotus*, are compelled to face the poverty from which the others escape. Just as abundance had before made the domestic cats wild, scarcity now made the burrowing owls tame and fearless of man. They were so reduced as scarcely to be able to fly,

and hung about the houses all day long on the look-out for some stray morsel of food. I have frequently seen one alight and advance within two or three yards of the door-step, probably attracted by the smell of roasted meat. The weather continued dry until late in the spring, so reducing the sheep and cattle that incredible numbers perished during a month of cold and rainy weather that followed the drought." (Huds. Natur. La Plata, 1892, pp. 66-67.)

Genus GLAUCIDIUM Boie.

Type.

<i>Glaucidium</i> , Boie, Isis, 1826, p. 976; Sharpe, Cat. Bds.	
Brit. Mus. ii. p. 188 (1875); Sharpe, Hand-list Bds.	
i. p. 297 (1899)	<i>G. passerinum.</i>
<i>Nyctipetes</i> , Swains. Classf. B. ii. p. 218	<i>G. perlatum.</i>
<i>Tænioglaux</i> , Kaup, Isis, 1848, p. 769	<i>G. radiatum.</i>
<i>Tænioptynx</i> , Kaup, l. c. p. 768	<i>G. brodiei.</i>
<i>Microglaux</i> , Kaup, l. c. p. 769	<i>G. perlatum.</i>
<i>Microptynx</i> , Kaup. Contr. Orn. 1852, p. 106	<i>G. passerinum.</i>
<i>Smithiglaux</i> , Bp. Rev. et Mag. de Zool. 1854, p. 544	<i>G. capense.</i>
<i>Phalænopsis</i> , Bp. l. c. p. 544	<i>G. nanum.</i>

Geographical Range.—Common to both hemispheres; absent from the Austro-Malayan and the Australian region proper; reaching into the western portion of North America to British Columbia, but absent from the region east of the Rocky Mountains, except in southern Texas.

GLAUCIDIUM NANUM (King).

Strix nana, King, Zool. Journ. III. p. 427 (1827: Port Famine).
Glaucidium nanum, Kaup, Contr. Orn. 1852, p. 103; id. Trans. Zool. Soc. IV. p. 202 (1853); Hartl. Naum. 1853, pp. 209, 220 (Valdivia); Burm. Reis. La Plata, II. p. 441 (1861); Scl. P. Z. S. 1867, p. 338 (Chili); id. and Salv. Ibis, 1868, p. 188 (Sandy Point, May); Huds. P. Z. S. 1872, p. 549 (Rio Negro); Scl. & Salv. Nomencl. Av. Neotr. p. 117 (1873: Chili); Ridgw. Proc. Bost. Soc. Nat. Hist. xvi, p. 104 (1873); Sharpe, Ibis, 1875, pp. 41, 259; id. Cat. B. Brit. Mus. II. p. 190 (1875: Port Famine and Straits of Magellan: Rio Negro); id. P. Z. S. 1881, p. 11 (Sandy Point, Jan.); Doering, Expl. al Rio Negro, Zool. p. 49 (1882: Choelechoel); White, P. Z. S. 1883, p. 41 (Córdoba, June and July); Salv. t. c. p. 426 (Chili); Vincig. Boll. Soc. Geogr.

Ital. (2) IX. p. 797 (1884); Burm. An. Mus. Nac. Buenos Aires, III, part x, p. 242 (1888: Patagonia); part xi, p. 316 (1890: Rio Chico del Chubut); Scl. & Huds. Argent. Orn. II. p. 56 (1889: Rio Negro, Patagonia); Ridgw. Proc. U. S. Nat. Mus. XII, p. 136 (1889: Laredo Bay); Oust. Miss. Scient. Cap Horn, Oiseaux, pp. 45, 324 (1891: Beagle Canal, Nov.; Orange Bay, Feb.); Frenzel, J. f. O. 1891, p. 115 (Córdoba); James, New List Chil. B. p. 6 (1892); Lane, Ibis, 1897, p. 177 (Rio Bueno, breeds Dec. and Jan.); Sharpe, Hand-list B. I, p. 297 (1899); Salvad. Ann. Mus. Genov. (2), xx, p. 615 (1900: Punta Arenas, May); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Patagonia); Carbajal, La Patagonia, part II, p. 260 (1900).

FIG. 360.



Glaucidium nanum. Adult male, P. U. O. C. 7877. Two-thirds natural size.

Athene ferox, Fraser (nec Vieill.), P. Z. S. 1843, p. 109 (Chili).

Athene nana, Gray & Mitchell, Gen. B. I. p. 35, pl. xii (1844); Homb. & Jacq. Voy. Pole Sud. Zool. III. p. 54 (1845); Pelz. Reis. Novara, Vög. p. 25 (1865: Chili).

Noctua nana, Des Murs in Gay's Hist. Chil. Zool. I. p. 246 (1847); Schl. Mus. Pays Bas, Striges, p. 25 (1862); Phil. & Landb. Cat. Av. Chil. p. 6 (1868).

Athene leucolaima, Bp. Consp. Av. I. p. 40 (1850).

Strix chilensis, Licht. Nomencl. Av. Mus. Berol. p. 8 (1854).

Phalænopsis nana, Bp. Compt. Rend. xli. p. 654 (1855).

Phalænopsis leucolaima, Bp. tom Cit. p. 654.

GENERAL DESCRIPTION.

Size.—Adult male, P. U. O. C. 7877, Punta Arenas, Chili (Straits of Magellan), 2 January, 1898. A. E. Colburn, collector.

Total length, 6.8 inches.

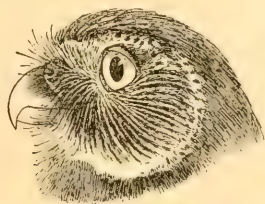
Wing, 3.75 inches.

Tail, 2.45 inches.

Adult female. Like the male in appearance but larger; length 7.80; wing 4.25; tail 2.8 inches.

Color.—Adult male cited above.

FIG. 361.



Glaucidium nanum. Adult male, P. U. O. C. 7877. Natural size.

Head: Above, dull ash-brown, streaked on the forehead plainly and elsewhere more obscurely with silvery white; lores and region about the eye white, the lores with many black hair-like bristles obscuring the underlying feathers; facial disk dull ash-brown, streaked with silvery white; a more or less well defined margin of silvery white encircling the facial disk from the white of the lores to the white on the throat.

Neck: With a collar on the nape, whitish in color, with some black markings, scattered on the nape, but forming two black patches, one at either terminus of the white collar, on the sides of the neck; chin pure silvery white, defined by a dark brown band crossing the upper throat;

the rest of the lower neck following the band white like the chin, forming a triangular patch just above the breast.

Back: Interscapular region concolor with the crown, dull ash-brown, the feathers streaked finely with ashy white; the lower back like the interscapular region, shading into rich chestnut rufous on the rump; the upper tail-coverts rich chestnut, with obsolete narrow bars of ashy brown.

Tail: Deep seal-brown, tipped with chestnut and crossed by nine or ten narrow bright chestnut bars; seen from below, the tail shows dull ashy brown, with a silvery gloss, the bars are dull rufous on the outer webs and on the inner part of the inner webs, but shade into pure white on the outer edges of the inner webs.

FIG. 362.



Glaucidium nanum. Adult male, P. U. O. C. 7877. Emargination of primaries. Natural size.

Wings: Quills all dark brown, ashy in tone; barred obscurely with a brighter shade of brown, notched on both webs with white spots; scapulars darker than the back and with an obscure rufescent shading or gloss, mottled on the outer webs with white oval spots, which together form bar of white or show as a series of white markings; upper wing-coverts dull ash-brown, sparsely spotted with silvery white; the greater series with large white spots defined by narrow black borders at the tips; under wing-coverts yellowish white, silky in character and slightly striped with dull brown.

Lower parts: Sides of the breast dull ash-brown, with obscure white mottling; sides of the body dull ash-brown; the rest of the under body

white, broadly streaked with dull ash-brown; the thighs yellowish brown, barred with dusky brown; under tail-coverts white, broadly streaked with dull ash-brown.

Bill: Bluish horn, becoming yellow at the tip.

Iris: Orange-yellow; in some individuals straw-yellow.

FIG. 363.



Glaucidium nanum. Feathering of foot. Natural size.

Feet: Feathered to the toes; the feathering on the tops of the toes silky, hair-like and with obscure brown markings on a whitish ground.

The adult female is like the adult male in color.

Young birds of the year and immature birds have a tendency to a reddish-brown suffusion and the spotting of lighter shade, which is white or inclined to white; in the adults is never white, but always yellowish-buff; the whole upper surface is more uniform, the streaking and spotting being obscured.

An adult female, 7876, P. U. O. C., Pacific Slope, upper waters of Rio Chico de Santa Cruz, Cordillera of Patagonia, 13 March, 1897, J. B. Hatcher, is much more reddish throughout than are other birds taken at the same time and place and suggests two phases of adult dress in the species.

Geographical Range.—Chili and Patagonia; northern Tierra del Fuego; Argentine Republic as far north as 33° south latitude (Córdoba).

This dwarf owl was found by the Princeton naturalists wherever they were in a partly wooded or in open country where there was some bush or tree growth. The series collected by these workers forms the basis of the above descriptions, and it is noticeable that the birds appear to be smaller than those used by other systematists; this applies to both sexes.

The birds breed throughout their range in December and January and appear to be resident where they occur.

E. W. White (P. Z. S., 1883, p. 41) records two specimens as follows:

"Male. Cosquin, Cordova, Arg. Rep., June 23, 1882.

"Female. Cosquin, Cordova, Arg. Rep., July 27, 1882.

"Iris yellow.

"It causes the naturalists much amusement to watch the habits of this pretty owl, that, perched perfectly motionless on a branch, utters such a siren cry as to attract little birds in great numbers. They are observed to cluster round it, all the while fluttering and in great excitement, charmed by some fascination. After waiting a while, the owl suddenly pounces upon the nearest for its victim. The natives call it 'el rey de los pajaritos' (the king of the little birds)."

Family TYTONIDÆ.

Genus TYTO Billberg.

Type.

Strix, Sharpe, Cat. Bds. Brit. Mus. ii, p. 290 (1875);

Sharpe, Hand-list Bds. i. p. 300 (1899) (nec.

Linn.) *S. alba*.

Aluco, Fleming, Phil. Zool. ii. p. 236 (1828) . . . *S. alba*.

Tyto, Billberg, Syn. Faunæ Scand. I. ii, tab. A (1828) *S. alba*.

Hybris, Nitzsch, Pteryl. p. 100 (1840) *S. flammea*.

Stridula, Selys-Longch. Faun. Belge, p. 60 (1842) . *S. alba*.

Eustrinx, Webb. & Berth. Orn. Canar. p. 8 (1844) . *S. alba*.

Megastrix, Kaup, Isis, 1848, p. 769 *S. tenebricosa*.

Glaux, Blyth, J. A. S. B. xix. p. 513 (1850) . . . *S. candida*.

Scelostrix, Kaup, Contr. Orn. 1852, p. 119 . . . *S. candida*.

Dactylostrix, Kaup, Contr. Orn. 1852, p. 119 . . *S. novæ hollandiæ*.

Glyphidiura, Reich. Syst. Nat. pl. xcii, fig. 2 . . *S. capensis*.

Cf. Sharpe, Ibis, 1875, p. 324.

Geographical Range.—The whole world except the extreme north and south land areas; absent from New Zealand and certain of the islands of the Malayan sub-region and Oceania.

TYTO PERLATA (Licht.).

The common Barn Owl or White Owl, Albin, Nat. Hist. B. II. p. 11, pl. xi (1738).

Strix aluco, Linn. Syst. Nat. I. p. 93 (1758); Le petit Chathaunt, Briss. Orn. I. p. 503 (1760).

Strix flammea, Linn. Syst. Nat. I. p. 133 (1766); Darw. Voy. Beagle, Birds, p. 34 (1841: Bahia Blanca, N. Patagonia); Des Murs in Gay's Hist. Chil. Zool. I. p. 255 (1847); Pelz. Reis. Novara, Vög. p. 29 (1865: Chili); Phil. & Landb. Cat. Av. Chil. p. 7 (1868); Scl. & Salv. Nomencl. Av. Neotr. p. 116 (1873); Sharpe, Cat. B. Brit. Mus. II.

FIG. 364.



Tyto perlata. Adult male, P. U. O. C. 7883. About one-third natural size.

p. 291 (1875: Bahia Blanca); Durnf. Ibis, 1877, p. 187 (Buenos Aires); White, P. Z. S. 1882, p. 622 (Concepcion, Misiones, June); Burm. An. Mus. Nac. Buenos Aires, III. part X. p. 242 (1888: Northern Patagonia); Withington, Ibis, 1888, p. 468 (Lomas de Zamora); Scl. & Huds. Argent. Orn. II, p. 48 (1889); Holland, Ibis,

1892, 203 (Estancia Espartilla, uncommon, breeds occasionally); Albert, Contr. Estud. Av. Chil. I. p. 168 (1898); Sharpe, Hand-list B. I. p. 300 (1899); Martens, Hamb. Magalh. Sammelr. p. 6 (1900: Cape Virgins, South Patagonia).

Lechuza, Azara, Apunt. I. p. 210 (1802).

Strix perlata, Licht. Verz. Doubl. p. 59 (1823: Brazil); D'Orb. Voy. Amér. Mérid. p. 135 (1835: Patagonia); Fraser, P. Z. S. 1843, p. 110 (Chili, rare); Des Murs in Gay's Hist. Chil. Zool. I. p. 257 (1847); Hartl. Naum. 1853, p. 220 (Chili); Burm. Reis. La Plata, II. p. 440 (1861); Phil. & Landb. Cat. Av. Chil. p. 7 (1868); Sharpe, Cat. B. Brit. Mus. II. p. 300 (1875); Doering, Expl. al Rio Negro, Zool. p. 49 (1882); Phil. Ornith. IV. p. 158 (1888: Pica, Tarapacá); Carbajal, La Patagonia Part II. p. 260 (1900).

Aluco flammeus, Barrows, Auk, I. p. 29 (1884; Lower Uruguay, common resident).

FIG. 365.



Tyto perlata. Adult male, P. U. O. C. 7883. Detail of face. Natural size.

GENERAL DESCRIPTION.

Size.—Adult male, 7883, P. U. O. C., upper waters Rio Chico de Santa Cruz, Pacific Slope Cordillera, Patagonia, 16 March, 1897. J. B. Hatcher.

Total length, about 13.75 inches.

Wing, 11.60 inches.

Tail, 4.90 inches.

An adult female from the same locality, 14 March, 1897, J. B. Hatcher, is similar to the male in color, but a little darker generally; the bird is larger; length 14.30; wing 12.10; tail 5.25 inches.

Color.—Adult male cited above.

Head: With pronounced facial disks and without ear-tufts. Top and back of head pale buffy yellow, overlaid sparingly with a grayish tint, finely mottled and speckled with dusky and silvery white; facial disk pure white, with a triangular deep chestnut spot in front of the eye; feathers of the ruff defining the disk shining silvery white, the terminating ones with a subterminal bar of buffy yellow and a narrow terminal margin of black or blackish; this ruff defining the facial disk begins at the base of the upper mandible, reaches around back of the ear and is continuous to the other side of the head, terminating, as it began, at the base of the upper mandible; the feathers of the disk proper stiffly filamentous, so as to present a more or less hairy aspect.

Neck: The nape of the neck like the back of the head: the sides of the same buffy yellow, each feather marked near the end with a minute triangular greyish brown spot; the chin and throat silvery white, with an obsolete wash of very faint buff and some scattered tiny greyish brown spots on some of the feathers.

Back: Interscapular region buffy yellow, brighter than on the head, the feathers much more overlaid with silver-grey, mottled with dusky and white, and with a definite white arrow-shaped spot on most of the feathers, bounded by dark brown; the lower back much the same, but deeper colored and more obscured by grey, the arrow-shaped markings not definite; upper tail-coverts similar.

Tail: The two central rectrices pale buffy white; the others, except the two outer ones on each side, pale buffy white on their exposed webs and pure silver-white on the inner webs; the two outer rectrices with a wholly white ground color; all the rectrices crossed, more or less distinctly, by six dusky-brown bars only a third as wide as the intervening ground color; on most of the feathers there is also some flecking of brown in minute dots and spots, more pronounced near the tips.

Wings: Quills pale buffy, rather lighter than the prevailing shade

FIG. 366.



Tyto perlata. Adult male, P. U. O. C. 7883. Showing relative length of quills.

above, and shading to white on the tips and inner webs; the primaries with irregular fine flecking of brown obscured by grey, most plentiful near the tips, and barred brokenly with six or seven dark brown bars, not entire, crossing the feathers; secondaries much like the primaries, but with definite broad white tips; the least wing-coverts buffy, with small spots of dusky on each feather; median series like the interscapular region; primary coverts much deeper brownish buff, with fleckings of dusky on a greyish overwash and arrow-shaped pale buff spots near the end of each feather; under wing-coverts pure silvery white, a few of the lesser series with small brown marks; the axillaries immaculate silvery white; the whole closed wing seen from below is pure white, showing only the bars on the first primary.

Lower parts: Silvery white and silky in character; washed on the sides and flanks and across the breast and chest with pale buff or cream color, each feather in these places with a small arrow-shaped brown subterminal mark; rest of the under body immaculate white; the leg feathers, except for a buffy wash exteriorly on the thighs, immaculate white; under tail-coverts pure silvery white.

Bill: Pale yellowish white (Hatcher).

Iris: Dull blue (Hatcher).

FIG. 367.



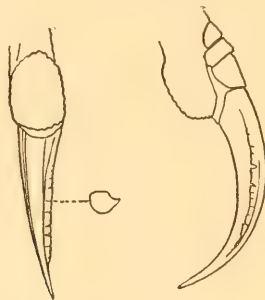
Tyto perlata. Feathering of foot. Natural size.

Feet: Feathered except on the upper surface of the toes, where there are sparse white hairy plumules.

Adult female, 7884 P. U. O. C. Upper waters Rio Chico de Santa Cruz, Pacific Slope, Cordillera, Patagonia, 14 March, 1897, J. B. Hatcher. Similar to the male, but a little larger. The colors throughout are somewhat emphasized; there is more silver-grey wash on the head, back and wings; the lower surface is almost entirely washed with buffy, and the terminal arrow-shaped markings of deep brown prevail on most of the feathers, extending to the exterior of the thighs and to the belly proper; the vent and lower tail-coverts immaculate; "eye dull blue; beak pale yellow" (Hatcher).

There does not appear at the present time material available on which to base descriptions of immature birds, or nestlings; young birds of the year after moulting the first plumage, ten weeks after assuming it, at which time all the feathers except the quills and rectrices are renewed, look much like adults.

FIG. 368.



Tyto perlata. Details of claws. Twice natural size.

Geographical Range.—Wooded region of Patagonia and Chili except at high altitudes. (The race of small white barn-owls of this region is nearer in size and in the color of the light phase of plumage to the European form than are other American forms, even those near at hand. The foregoing is, so far as we know, the present range.)

The Barn Owl as found in Patagonia is an uncommon bird. The Princeton naturalists were fortunate to meet with it; but they found the birds only in the region at the head waters of the Rio Chico de Santa Cruz, and even here only two individuals were secured. As indicated above these two birds in appearance and measurements appear to be indistinguishable from the bird as it occurs in England. The birds are alike in size with their European relatives and, so far as the light phase of plumage is concerned, not to be separated by color. So far, no dark plumage birds have been brought to light from this part of South America. Birds from the vicinity of Buenos Aires, five specimens all in the light plumage, are very like the two Patagonian individuals, but they average much larger, nearly an inch, both sexes being represented. All the birds from the La Plata region are light colored; Mr. Barrows found the birds common and breeding at Concepcion in Lower Uruguay, but he does not refer to any birds in the dark phase of plumage.

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Witmer Stone*

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Reports of
The Princeton University Expeditions
to Patagonia, 1896-1899

J. B. HATCHER, IN CHARGE

EDITED BY

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VOLUME II—ORNITHOLOGY

PART V.

PSITTACIDÆ — ICTERIDÆ

BY

WITMER STONE

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA

(Pp. 719-857; Pl. II.-XV.)



PRINCETON, N. J.

THE UNIVERSITY

STUTTGART

SWEIZERBARTSCHE VERLAGSHANDLUNG (E. NÄGELE)

1927

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Order PSITTACIFORMES.

Sharpe, Classif. Bds. p. 83 (1891); Sharpe, Hand-List Bds. ii. p. 1 (1900).

Family PSITTACIDÆ.

Salvad. Cat. Bds. Brit. Mus. xx. p. 137 (1891); Sharpe, Hand-List Bds. ii. p. 12 (1900).

Subfamily ARINÆ.

Salvad. Cat. Bds. Brit. Mus. xx. p. 145 (1891); Sharpe, Hand-List Bds. ii. p. 13 (1900).

Genus CYANOLISEUS Bonaparte.

Cyanoliseus Bp. Rev. et Mag. de Zool. 1854, p. 150 . . . C. *byroni*.
Geographical Range.—Southern South America.

CYANOLISEUS PATAGONUS (Vieillot).

Psittacus patagonus Vieillot, N. Dict. d'Hist. Nat. xxv. p. 367 (1817)
 (based on *Maracana patagona* of Azara). (Coast of Patagonia.)

Description.—Adult male, P. U. O. C., February, 1897, Chubut, Patagonia. Total length, 17.2 inches; wing, 9.1; culmen, 1.2; tail, 9.00; tarsus, .85. Above olive green tinged with brown, darker on the forehead; rump and upper tail coverts bright lemon chrome yellow, wings green tinged with olive and brown, the remiges and primary coverts peacock blue, the primaries black at the tip; tail olive green becoming brown on the inner webs, central pair of feathers olive green on both webs, tinged with blue on the outer, especially near the tips; under parts, breast and throat grayish brown, with a cream-colored patch at each side connected by a narrow line across the breast, sides of abdomen and under tail coverts chrome yellow, the latter shaded with olive, center of abdomen scarlet, bill blackish horn color, feet dull reddish brown, iris white.

Geographical Range.—Throughout Patagonia even on the open plains; Argentina and Uruguay, north to 27° south latitude.

This parrot was observed by the naturalists of the Princeton Expeditions, on the upper waters of the Rio Chico de Santa Cruz, where it was not very numerous and only two skins were preserved and brought home. The habits of the bird have been so well described by writers and travel-

lers that little can be added; Darwin's remarks on the Patagonian Parrot as he met with it are appended, as well as the more recent discussion of the birds by White.



FIG. 369. *Cyanoliseus patagonus*. About one-third natural size.

Darwin, in Gould's Voyage of Beagle (Birds, p. 113, 1841), says: "I obtained specimens of this bird at Bahia Blanca in northern Patagonia, where there is not a single tree and the country is dry and sterile. I did not meet with this species in the southern parts of Patagonia, but it is common near Concepcion in Chili, in nearly the same latitude. They build their nests in holes in cliffs of earth or gravel, together with the *Hirundo cyanoleuca*. In September at Bahia Blanca, they were laying: their eggs are quite white, and small in proportion to the bird. Several usually rush forth from their holes at the same instant, and utter a noisy scream."

E. W. White¹ says of this species: "At Guazan [Argentina] this parrot is

¹P. Z. S. p. 620, 1882.

found in large flocks, and settles usually on bare trees. By the natives it is called 'Loro Barranquero,' as it builds its nests in holes in the barrancas or cliffs. When one is shot of a flock flying over, the rest will continue

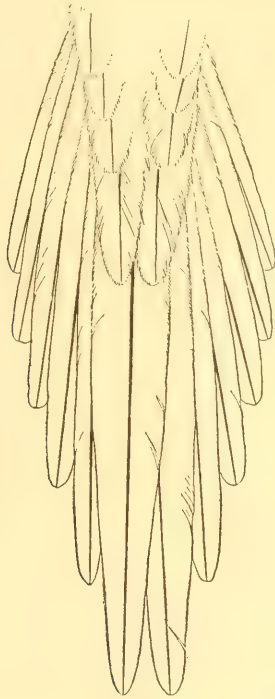


FIG. 370. *Cyanoliseus patagonus*. Shape of tail. About two-thirds natural size.

to whirl round the spot long enough to give the sportsman time to kill nearly the whole ; and at every shot, as the victims tumble, the rest redouble their screams, so that the noise, always great, becomes at length deafening.

"At Cosquin, in the neighborhood of Cordoba, I had more opportunity of observing them. They are extremely abundant throughout the sierras there, and are very destructive to crops.

"On each patch of ground sown with wheat or maize a boy is stationed as a scarecrow ; and the shouts of these, the whole length of the valley, some leagues, almost rival in intensity the parrot chorus.

"The warfare between the birds and their tormentors, however, is invariably in favor of the former, as they have a habit of gliding unseen to the bottom of the stems, which they bite through, so that the stalk falls and they consume the grain at leisure.



FIG. 371. *Cyanoliseus patagonus*. Configuration of the primaries. About two-thirds natural size.

"In the winter, fallen fruit-kernels of the woods afford them sustenance. They breed in deep holes on the cliff-faces; and the attempt sack their nests is very hazardous. Four or five eggs are usually found in a clutch. The young birds form a tasty dish."

Genus MICROSITTACE Bonaparte.

Type.

Microsittace Bp. Rev. et Mag. de Zool. 1854, p. 150 . *M. ferrugineus*.

Geographical Range.—Southwestern and extreme southern South America.

MICROSITTACE FERRUGINEUS (P. L. S. Müller).

Psittacus ferrugineus P. L. S. Müller, Syst. Nat., Anhang, p. 75 (1776).
(Straits of Magellan.)

Description.—Adult male, P. U. O. C. 7747, Rio Chico de Santa Cruz, Cordilleras of Patagonia, February 19, 1897. J. B. Hatcher. Total length, 13.75 inches; wing, 7.25; culmen, .75; tail, 6.00; tarsus, .65. Above dull green, brighter and bluer on the crown, all feathers with narrow dusky margins, lores and forehead reddish brown; smaller wing coverts similar to back, median coverts and tertials plain green, greater coverts and remiges strongly tinged with peacock blue; tail dull red above and below; under parts similar to the back but lighter, with similar dusky margins, center of abdomen dull red, bill and feet black.

Geographical Range.—Cordillera of central and southern Patagonia and southern Chili to the Straits of Magellan and Tierra del Fuego.



FIG. 372. *Microsittace ferrugineus*, adult male, P. U. O. C. 7747. About one-half natural size.

Mr. Hatcher observed this small parrot first in the extreme southwestern part of Tierra del Fuego, and his vivid experience is given in his Narrative. Mr. Lane found the birds as far north as Valdivia in Chili, and other observers have recorded it throughout the Patagonian Andes, where the Princeton naturalists met with these birds in numbers. (See Vol. I, pp. 149–151.)

Cunningham writes of this species at the Straits of Magellan: "The occurrence of a member of the parrot family so far south strikes the traveller at first sight as very remarkable, and it is not surprising that it should have attracted the attention of several of the earlier navigators who braved the dangers of the Strait. Thus, in the voyage of Oliver van Noort in 1599, and in that of Spilbergen undertaken fifteen years later, reference is made to fair woods in the Strait of Magellan full of parrots; and Captain Wood, in his interesting narrative of this Voyage through the Streights of Magellan in 1699–70, mentions that in a wood at Port Famine he "saw five birds, among which was a small parrot or parakite." The species appears to be tolerably common throughout the wooded country on the shores of the Strait, and the channels on the west side of Patagonia, and is also abundant at Chiloe. It generally flies in small flocks, which herald their approach by a series of short screams, lighting on the topmost branches of the trees, where they scramble about

with their bodies lying close to the boughs, a habit which, together with their green color, which closely approximates to that of the foliage, renders them difficult to perceive, and thus screens them from danger. According to Captain King (and an examination of the contents of the

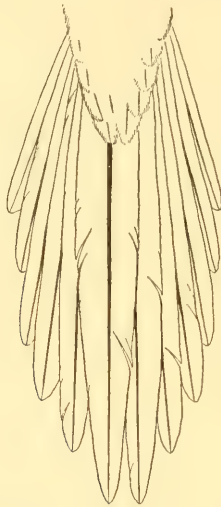


FIG. 373. *Microsillace ferrugineus*, P. U. O. C. 7747. Outline of tail. About two-thirds natural size.

stomachs of various individuals has enabled me to verify this observation), they feed chiefly on the seeds of the Winter's-bark tree, to be afterwards mentioned." (Nat. Hist. Str. Magell. 1871, pp. 76-77.)

Suborder HALCYONES.

Sharpe, Classif. Bds. p. 80 (1891); Sharpe, Hand-List Bds. ii. p. 48 (1900).

Family ALCEDINIDÆ.

Sharpe, Cat. Bds. Brit. Mus. xvii. p. 93 (1892); Sharpe, Hand-List Bds. ii. p. 48 (1900).

Subfamily ALCEDININÆ.

Sharpe, Cat. Bds. Brit. Mus. xvii. p. 93 (1892); Sharpe, Hand-List Bds. ii. p. 48 (1900).

Genus CERYLE Boie.

Ceryle Boie, Isis, 1828, p. 316. Type *Alcedo rudis* Linnæus.

Geographical Range.—The whole of the Western Hemisphere; the Mediterranean countries; China, Japan, the Ethiopian and Indian regions.

CERYLE STELLATA (Meyen).

Alcedo stellata Meyen, Nov. Act. Acad. Leop. XVI, Suppl. p. 93, pl. xiv, 1834 (Chili).

Description.—Adult male, P. U. O. C. 8982, Straits of Magellan, May 1897, from Museo La Plata. Total length, 16.2 inches; wing, 7.50; culmen, 2.5; tail, 4.4; tarsus, .4. Above blue gray, neck silky white extending in a broad band around to the throat; loreal spot and spot below the eye white, a few of the wing coverts with small round white dots, secondaries with inner web black, indented with white; primaries black with most of inner web white and edge of outer web of outermost feather indented with white; tail feathers black spotted or indented with white and outer webs margined with blue gray, central pair blue gray with white bars on both webs, and a black area along the shaft; under parts, throat and neck, lower abdomen and under tail coverts white, the latter speckled with dark slate; whole of breast and upper abdomen tawny chestnut; bill black, lower mandible yellowish at base; feet yellowish brown.

Female similar but with a broad slaty blue band across the chest.

Geographical Range.—Peru and Bolivia to Chili and Patagonia, extending to Straits of Magellan and Tierra del Fuego.

Cunningham found this species at Port Gallant, Straits of Magellan, March 11, 1867, and in his account says: "This bird we found common in the dark and dreary inlets of Fuegia and the Channels, as well as at Port Otway, the Chonos Archipelago, and Chiloe. It is often to be seen perched on the branch of a tree overhanging the water, keeping a vigilant look-out for its finny prey, and is of bold nature, readily allowing the sportsman to come within range of it. On more than one occasion a specimen lighted on the lower rigging of the ship, and sat there for some time, uttering at intervals its sharp cry. Above, the principal tint of the plumage is grayish slate-color, with white spots, while beneath a somewhat rufous hue prevails. I was not able to ascertain anything as regards the nidification of the species. A female specimen, obtained in December 1868, had ova in a far-advanced state of development in the ovary." (Nat. Hist. Str. Magell. 1871, p. 176.)

Coppinger found it at Cockle Cove, Straits of Magellan, October 1879, and says: "The handsomest bird in this region is the kingfisher (*Ceryle stellata*). It is commonly to be seen perched on some withered branches overhanging the water, where it will remain in a huddled-up sleeping attitude, its head turned sideways, but with an eye all the time fixed intently on the water beneath, until it espies a fish, when it drops like a stone, cleaving the water with a short sharp splash, and a moment afterwards emerges with an upward impulse, which raises it clear of the water, and enables it to fly away at once without any preliminary shaking or fluttering. It is an exceedingly unsuspicious and fearless bird, and when perched on its place of observation, will often allow one in a boat to approach within arm's reach of it. Mossy banks overhanging low sea cliffs are its usual nesting places, and there it excavates a tunnel through the soft moss and turfy soil, and at a distance of more than two feet from the aperture forms its nest." (Cruise, Alert, 1883, pp. 107-108.)

Suborder CAPRIMULGI.

Sharpe, Classif. Bds. p. 81 (1891); Sharpe, Hand-List Bds. ii. p. 78 (1900).

Family CAPRIMULGIDÆ.

Hartert, Cat. Bds. Brit. Mus. xvi. p. 623 (1892); Hartert, Tierr. Lief. i. Aves (1897); Sharpe, Hand-List Bds. ii. p. 78 (1900).

Subfamily CAPRIMULGINÆ.

Hartert, Cat. Bds. Brit. Mus. xvi. p. 519 (1892); id. Tierr. Lief. i. Aves (1897); Sharpe, Hand-List Bds. ii. p. 79 (1900).

Genus STENOPSIS Cassin.

Type.

Stenopsis Cassin, Proc. Ac. Nat. Sci. Phila. v. p. 179
(1851) *S. cayennensis*

Geographical Range.—South America, from central Patagonia, Province of Chubut, north to the Isthmus of Panama.

STENOPSIS LONGIROSTRIS (Bonaparte).

Caprimulgus longirostris Bonap. Jour. Acad. Nat. Sci. Philada. iv. p. 384, 1825 (Brazil).

Description.—Adult male, Colln. British Museum, Chupat, Patagonia, H. Durnford. Total length, 9.00 inches; wing, 6.30; tail, 4.50; tarsus, .75. Above gray with a silvery cast, mottled with black and fulvous, a series of black spots along the center of the crown, a rusty buff collar on the hind neck; upper wing coverts like the back, remiges deep brown, nearly black; first four primaries crossed by a broad bar of white, the rest spotted throughout with dull reddish brown, as are the first four near their bases, secondaries similar; central tail feathers like the back, the next pair with a large white mark on the terminal part of the inner web, increasing on the others until the outermost are chiefly white; lower parts dirty fulvous, with a white collar with fulvous or buffy border across the lower throat; rest of under parts transversely barred with narrow rather irregular brown markings; feet and bill blackish.

Geographical Range.—Bolivia and the interior of Brazil, Argentina and Chili and Patagonia to about 46° south latitude.

That part of Patagonia where this goatsucker has been recorded was not visited by the Princeton Explorers, nor did their field work extend the known range of the bird. Darwin, under the name of *Caprimulgus bifasciatus*, records the occurrence of the bird in the Chilian Andes at an elevation of 6,000 feet above the sea, on the Bell of Quillota. He says that it has a gentle plaintive cry and that it is regarded with superstitious dread by many of the inhabitants. Mr. Gould observes:¹ "This species has a strong resemblance, at the first glance, with the *Caprimulgus Europeus*, but may be readily distinguished by its shorter wing, more lengthened tarsi, by a conspicuous white band across the base of the tail, and by all these feathers, except the two middle ones, having another band near the tip."

Suborder TROCHILI.

Sharpe, Classif. Bds. p. 81 (1891); Salvin, Cat. Bds. Brit. Mus. xvi. p. 27 (1892); Sharpe, Hand-List Bds. ii. p. 97 (1900).

Family TROCHILIDÆ.

Hartert, Tierreich, Lief. ix. pp. 1-230 (1900); Sharpe, Hand-List Bds. ii. p. 97 (1900).

¹Voyage of Beagle, Birds, p. 37.

Genus EUSTEPHANUS Reichenbach.

Eustephanus Reich. Au. Syst. pl. 40 (1849); type *E. galeritus*.

Geographical Range.—Chili and Patagonia to the Straits of Magellan and Tierra del Fuego and the islands of Juan Fernandez.

EUSTEPHANUS GALERITUS (Molina).

Trochilus galeritus Molina, Sagg. St. Nat. Chil. p. 219, 1782 (Chili).

Description.—Adult male, 65427 Acad. Nat. Sci. Philada. Total length, 4.30 inches; wing, 2.50; culmen, .50; tail, 1.50; tarsus, .26. Above shining bronze green, crown brilliant metallic red, remiges blackish, below pale fulvous, the feathers, except the middle of the abdomen, with a single spot of metallic green.

The female lacks the red crown.

Geographical Range.—The west coast of Southern South America, north to 30° south latitude, ranging south into the forests of Tierra del



FIG. 374. *Eustephanus galeritus*, adult female, P. U. O. C. 7986. Natural size.

Fuego; the Straits of Magellan; Patagonia north to the west throughout the Province, but on the eastern coast not recorded north of the mouth of the Rio Santa Cruz; Chiloe and the islands of the Chonos Archipelago; the island of Juan Fernandez.

This humming-bird, characteristic of the Straits of Magellan, and the forests of Tierra del Fuego, in both of which regions it is represented throughout the year, was found by the Princeton naturalists as far north

on the eastern coast as the region about Cape Fairweather, though the birds were not common here during the month of May, when specimens were secured; these appear to be all birds of the year. On the western coast the birds range far north but the records of their occurrence on the Atlantic coast are few and indicate a very restricted north and south range



FIG. 375. *Eustephanus galerilus*, P. U. O. C. 7986. Outline of tail. Natural size.

here. There can be no doubt that while the birds are present in the forests of the Straits and Tierra del Fuego all the year round, there is a very considerable migration from the region after the breeding season, when the birds are more common than at other times; this is in December and January.

Cunningham¹ says of this species at Sholl Bay: "A tiny humming-bird, *Trochilus forficatus*, made its appearance, flying about over the flowers, and seeming in strange contrast with the gloomy nature of the climate. We often saw specimens of it in the Channels subsequently; and I believe it extends to the southern extremity of Fuegia, while northwards, if I am not mistaken, it ranges as far as Peru—thus passing through every variety of climate, from an intensely humid cold region to a tropical one where rain hardly ever falls."

A. A. Lane² writes of it: "I did not notice this humming-bird in Central Chili in December, 1889, but subsequently, on coming to Arauco in the middle of 1890, I found it at first in limited numbers, and afterwards increasing as the winter passed away. Numbers may be seen in the southern forests round fuchsia-bushes when in flower. Occasionally individuals come into the rooms of houses, especially where flowering creepers grow round the window."

¹Nat. Hist. Str. Magell. 1871, p. 319.

²Ibis, 1897, pp. 46-47.

Genus PATAGONA Gray.

Patagona Gray, List. Gen. Birds (1840), p. 18, type *P. gigas*.

Geographical Range.—Andes from Ecuador to Chili and Argentina and the Cordillera of Patagonia (to Tierra del Fuego?).

PATAGONA GIGAS (Vieillot)

Trochilus gigas Vieillot, Gal. Ois. p. 296, pl. 180, 1825 (Brazil).

Description.—Adult male, 59045 Acad. Nat. Sci. Philada. Cumbaya, near Quito, Ecuador, May 2, 1911. S. N. Rhoads. Total length, 8.10 inches; wing, 5.06; culmen, 1.45; tail, 3.25; tarsus, .35. Above, including wings and tail, dull grayish brown with a more or less defined green gloss; crown feathers with very narrow gray edgings, rump feathers largely white on the sides and base, the adjacent feathers of the lower back showing buff at base, under parts cinnamon, with grayish centers to some of the feathers; outermost tail feathers lighter than the others except at tip.

Geographical Range.—Andes of South America from Ecuador to Southern Chili; the Cordillera of Western Patagonia; Tierra del Fuego (?).

This is essentially a high mountain form of humming-bird and appears to occur regularly in the Cordillera of Western Patagonia. That it may be found in the mountain regions of Tierra del Fuego is possible but the reference as to its invading this region is somewhat ambiguous; from Darwin¹ the following quotation is copied; he has been speaking of *Trochilus forficatus* [= *Eustephanus galeritus*] as it occurs in Tierra del Fuego, the island of Chiloe and other points where he studied this bird, and goes on to say: "When this species migrates in the summer southward, it is replaced by the arrival of another species coming from the north. This second kind (*Trochilus gigas*) is a very large bird for the delicate family to which it belongs; when on the wing its appearance is singular. Like others of the genus, it moves from place to place with a rapidity which may be compared to that of the *Syrphus* amongst flies, and the *Sphinx* among moths; but whilst hovering over a flower, it flaps its wings with a very slow and powerful movement, totally different from that vibratory one common to most species, which produces the humming noise. I never saw any other bird, where the force of its wings appeared (as in the butterfly) so powerful in proportion to the weight of the body. When hovering

¹Nat. Voy. Beagle, p. 271, 1882.

by a flower, its tail is constantly expanded and shut like a fan, the body being kept in a nearly vertical position."



FIG. 376. *Patagona gigas*, adult female. Natural size.

"The nest," Gould states,² "is deep in proportion to its width; externally three inches and a half deep; internal depth a little under one inch and three quarters; width, within, one inch and two tenths; mouth slightly contracted. Externally it is formed of fine fibrous grass woven together,

¹ Voyage of Beagle, Birds, p. 112, 1841.

and attached by one side and bottom to some thin upright twigs; internally it is thickly lined with a felt, formed of the pappus of some composite flower."

E. W. White,¹ who found it at Fuerte de Andalgalá, Catamarca, Argentina, says: "This magnificent bird, which the natives say they never have seen before at Andalgalá, was shot on the 'palan-palan,' the usual plant that it frequents at this season. It appeared here just after a two-days' severe snow storm, so that in all probability it had been driven down hither by it.

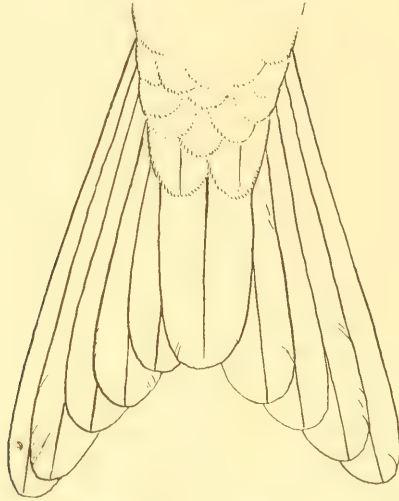


FIG. 377. *Patagona gigas*, outline of tail. Natural size.

"It is exceedingly powerful on the wing, and flutters in front of a flower, sipping the nectar, exactly like the smaller species of this family. They have a most peculiar, zig-zag, jerky flight, which, when making a long detour for any particular spot, becomes undulating.

"They are without doubt partially insect-eaters, as I have not only observed their crops full of flies and small beetles, but have also seen them pursue and catch them in the air, with the motions of a Flycatcher.

"They perch on some bare branch of a plant, which they entirely appropriate, driving off every other bird that dares to approach, and every now and then visit all its flowers to sip the sweets. The large bumble-bees, however, cause them some trouble, as they likewise are addicted to sip-

¹ P. Z. S. 1882, pp. 615-616.

ping nectar; these the *P. gigas* attacks with all its force, and by fluttering its wings, rushing at, pushing and pecking them, succeeds in ridding the spot of their presence.

"The note of this bird is similar to the chirp of a young Sparrow, but much stronger.

"These birds, like animals generally in the Argentine Republic, take no notice of a person mounted, but instantly disappear when a foot-passenger approaches; so that as I was on muleback I was enabled to ride close up to and observe them.

"The seat of *P. gigas* is so firm and close to the branch that its tiny feet are invisible; the breast is puffed out, and its head in continual motion from one side to the other with a jerky movement. When disturbed it darts off around with a rough jerky flight for a minute or so, and then endeavours to return, but, if still interfered with, seeks a dry twig at the top of some neighbouring tree on which to alight. Its poise when suspended, sipping at the flowers, is heavy and laboured, and the motion of its large wings, although rapid, is perceptible to the eye; and it never remains more than half a minute in this position, when it retires to a branch to rest for at least five minutes, perching with its head towards the sun and its beak slightly elevated."

Suborder PICI.

Sharpe, Classif. Bds. p. 84 (1891); Sharpe, Hand-List Bds. ii. p. 200 (1900).

Family PICIDÆ.

Hargitt, Cat. Bds. Brit. Mus. xviii. p. 2 (1890); Sharpe, Hand-List Bds. ii. p. 200 (1900).

Subfamily PICINÆ.

Hargitt, Cat. Bds. Brit. Mus. xviii. p. 9 (1890); Sharpe, Hand-List Bds. ii. p. 200 (1900).

Genus COLAPTES Swainson.

Colaptes Swains. Zoöl. Jour. 1827, p. 353, type *Cuculus auratus* Linn.

Geographical Range.—North America to Hudson Bay and Alaska; Middle America and the West Indies; South America to Straits of Magellan and Tierra del Fuego.

COLAPTES CAMPESTROIDES (Malherb.).

Geopicos (*Colaptes*) *campestroides* Malherb. Rev. et. Mag. de Zool., 1849, p. 541 (South America).

Description.—Adult male, 8988 P. U. O. C. Prov. San Luis, Argentina, August, 1898. Museo La Plata. Total length, 13.75 inches; wing, 6.90; culmen, 1.6; tail, 5.4; tarsus, 1.3. Crown black, rest of upper parts dark brown barred narrowly with buffy white; rump white, wing quills bright yellow; tail black, outermost feathers with narrow white bars on outer web; sides of face and throat white, malar stripe red speckled with black and white, ear coverts extending down the sides of the neck and expanding into a broad breast band bright cadmium yellow or orange, which color suffuses the feathers on the back of the neck; rest of lower parts dull white barred with black; under surface of wings yellowish white, bill and feet dull brown color with bluish casts.

The female lacks the red malar stripes and is duller.

Geographical Range.—Resident and breeding from the northern part of Patagonia, Rio Negro Region, north to southern Brazil and Uruguay.

The Golden-necked Pampas Woodpecker has thus far not been discovered in that portion of Patagonia explored by the Princeton expeditions. The birds are however common residents and breed in the northern part of the territory. While generally nesting in holes it seems probable from the observations of Mr. Barrows that they also at times and in certain regions rear their young in burrows in the earth; he writes: "In the treeless region about the Sierra de la Ventana [in the extreme southern part of the province of Buenos Aires] we saw this bird in about holes in the banks of streams, where it doubtless had nests" (Auk, i. p. 26, 1884). The same writer speaking of its call notes likens them to the alarm cry of *Totanus melanoleucus* "but so loud as to be almost painful when close at hand, and easily heard a mile or more away" (op. cit. pp. 25-26).

O. V. Aplin says of this species in Uruguay:¹ "A very common resident; indeed, the number of these beautiful golden-necked Woodpeckers you see in this rather treeless country is remarkable. They are commonly met with about the camp, though seldom far from the monte, a quinta, or patch of rocks, and are often to be seen perched on the fence-posts. Many frequent the monte, and doubtless find a certain number of willows big enough to serve as nesting-trees. The large

¹ Ibis, pp. 189-190, 1894.

ombú trees about puestos and ranchos harbour some; but the favourite resort in the nesting-season is an estancia with a large plantation of trees, gums, acacias, etc. In a country where trees are raised only at much expense, and are greatly appreciated for their shade and shelter, it is obviously undesirable to have them (while still growing) pierced by the Woodpecker holes, so that estancieros are under the necessity of killing many Pampas Woodpeckers in the spring. Fifteen were shot at Sta. Elena during the month ending 22d October, and yet I saw four or five about the trees a day or two after. Finally one pair succeeded in breeding, and four fresh eggs were taken from a hole in a decayed gum in the last days of November. At Sta. Adelaida I saw a Woodpecker feeding its young in a hole in a gum as late as the 29th January. After the breeding-season they do no damage, and at all seasons they are among the most familiar birds about houses where there are trees. I have seen the mud walls of a deserted ruined rancho pierced through and through with holes, and disturbed Woodpeckers from the spot; the holes may have been partly the work of the Minéra. But I have heard complaints of Woodpeckers damaging the woodwork and walls of houses. The Pampas Woodpecker obtains most of its food on the ground, and it is common to flush them (in family parties after the breeding season) when riding over the camp. They perch crosswise on a branch to a great extent, but are also very commonly seen clinging vertically to and climbing up the trunks and larger branches."

COLAPTES PITIUS CACHINNANS Wetmore and Peters.

Colaptes pitius cachinnans Wetmore and Peters, Proc. Biol. Soc. Wash. 1922, 35, p. 43 (Bariloche, Rio Negro).

Description.—Adult female, 7759 P. U. O. C. Rio Chico, Patagonia, February 20, 1897. Total length, 12.60 inches; wing, 6.35; culmen, 1.46; tail, 4.65; tarsus, 1.15. Whole top of the head gray, sides of face and entire throat pale buffy or isabelline; back and wings dark brown with narrow buffy or brownish white transverse bars, rump yellowish white, upper tail coverts black with transverse yellowish white bars, wing quills yellowish, tail black, outermost pair of feathers with slight yellowish white tips and very small spots on the edge of the outer web; under parts barred black and yellowish white, breast with black predominating, bars about equal on other parts; bill and feet dull horn color.

The male has an absolute moustacial patch of dull brown with scattered scarlet feathers mixed through it.

Geographical Range.—Western Patagonia; head waters of the larger Patagonian rivers, Rio Negro, etc.

The Primrose-shafted Flicker was found by the naturalists in the Cordillera at the head waters of the Rio Chico de Santa Cruz, as a common bird and noted daily. This was in February and March 1897 and the birds sent from this region then are in unworn fine plumage, showing no signs from the feathers of having recently nested; in fact they appear to have but just completed a moult. A pair of birds from the Rio Negro, collected by the naturalists in the employ of the Museo de La Plata and now in the Princeton collection, are very worn as to plumage and betray every mark of parental cares. The breeding season it would seem is early in the spring, November and December, and probably but one brood is reared.

That the birds are in habits very similar to their congeners in both North and South America is apparent from the subjoined account of Mr. Lane, who has had ample opportunity to become acquainted with the live birds and who gives a graphic sketch of their methods of life.

A. A. Lane says¹ of this woodpecker: "This is a common species all through the south of Chili. I observed it in the provinces of Arauco and Valdivia, and also in Chiloe, at Puerto Montt. It is known generally as the 'Pitigüe,' a name taken from the note of the bird.

"The sexes so closely resemble each other that it would be impossible to distinguish them at any distance; they are, so far as I could ascertain, also similar in size. They are invariably met with in pairs, seldom, if ever, singly; sometimes two or three pairs go in company.

"The birds are specially plentiful on the margin of the forest or pioneer stations, where the ground has been cleared by burning. In this operation the charred trunks of the large trees are left standing a long time before the land is properly cleared by advancing civilization, and on such trees the 'Pitigües' appear to find abundance of sustenance, as their loud though discordant cry is frequently heard. They often call out on being approached, thus betraying their presence. I frequently observed them feeding on the ground, on the grassy plots, especially if there were logs lying there. They proceed by creeping or going at an

¹ Ibis, pp. 47-48, 1897.

awkward gait, hopping and walking alternately. I was told at Rio Bueno that they nest in a deep hole in a tree-trunk high up from the ground, about Christmas, laying three or four white eggs, but I never found the nest."

Genus DRYOBATES Boie.

Dryobates Boie, Isis, 1826, p. 977, type *Picus pubescens* Linnæus.

DRYOBATES LIGNARIUS (Molina).

Picus lignarius Molina, Saggio St. Nat. Chil. p. 342, 1782 (Chili).

Description.—Adult male, 19275 Colln. Acad. Nat. Sci. Phila. Chili, Dr. J. K. Townsend. Total length, 7.00 inches; wing, 3.60; culmen, .87; tail, 2.12; tarsus, .75. Whole top of head black, occiput scarlet, entire upper parts including wings and tail transversely barred brownish black and white; under parts white, streaked with black, streaks broadest on the breast; a white stripe extending backward from the eye and another below the ear coverts, the latter being dark brown.

The female lacks the scarlet occipital crescent.

Geographical Range.—Argentine Republic, Patagonia to the Straits of Magellan; Peru, Chili and Bolivia, the Island of Chiloe.

This little woodpecker does not seem to be at all a common bird in southern Patagonia, and while it has been recorded by many explorers from the Straits of Magellan, all agree that it is rarely met with. The naturalists from Princeton did not discover it at any point in their travels.

The distribution of the bird and the occurrence on the immediate boundary of its range of a *Dryobates* so closely allied to the present form as is *D. mixtus* is of interest to the student of geographical distribution; for while at the present there do not seem to be intergrades between the two forms, it can have been at no very distant period that they were at least both geographical races of the same parent stock intergrading in the central regions of their habitat, somewhere in central Argentina; even now the birds when alive must be very difficult to discriminate as the chief distinguishing marks are the broader stripes of white on the crown and two extra bars of white upon the tail, which are characteristic of *mixtus* and serve to separate this bird from *lignarius* when examining preserved specimens.

A. A. Lane says of it:¹ "This species seems to be distributed over central and southern Chili, but I never found it plentiful in any locality. In the south I did not observe it in the forests, nor did I hear of its occurrence there; but I occasionally found it about clumps of low timber on open flats and in swamps.

"The local name is 'Carpintero' or 'Carpintero chico.'

"The female is somewhat smaller, and does not attain the bright red on the back of the head which makes the male conspicuous. These birds utter a peculiar call-note, by which they may be recognized, as they are not often seen unless looked for."

Cunningham found this species at Sandy Point in 1866 and says:² "A considerable number of a species of teal were shot by my companions, as well as a single specimen of a small black and white woodpecker, with a red crest. This species, the *Picus ligniarius*, which does not appear to be common in the Strait, we subsequently met with at Chiloe."

Genus IPOCRANTOR Cabanis & Heine.

Type.

Ipcrantor Cab. & Heine, Mus. Hein. iv. p. 99 (1863) . *I. magellanicus*.
Geographical Range.—Chili and Patagonia, to the extreme south.

IPOCRANTOR MAGELLANICUS (King).

Picus magellanicus King, Zool. Jour. iii. p. 430, 1827 (Port Famine).

Description.—Adult female, P. U. O. C. 7758, Punta Arenas, Chili, January 2, 1898. Total length, 16 inches; wing, 8.45; culmen, 2.12; tail, 6.10; tarsus, 1.50. Entire plumage black with a bluish gloss, except the area immediately around the base of the bill, which is scarlet, and an area on the inner webs of the remiges, which is white; this occupies only a basal area on the outermost primaries, not reaching to the shaft, but on the tertials it reaches to the tip of the feather and spreads over into the outer web.

The male differs in having the entire head and neck scarlet.

Bill and feet dull bluish horn color.

Geographical Range.—The forest regions of Chili and Patagonia south to the Straits of Magellan; northern Tierra del Fuego.

¹ Ibis, p. 48, 1897.

² Nat. Hist. Str. Magell. 1871, pp. 137-138.

This giant woodpecker of the forests in the southern Andes and foothills was only met with on three occasions by the Princeton Naturalists. The birds frequent only the deep primeval woods and appear to be dis-

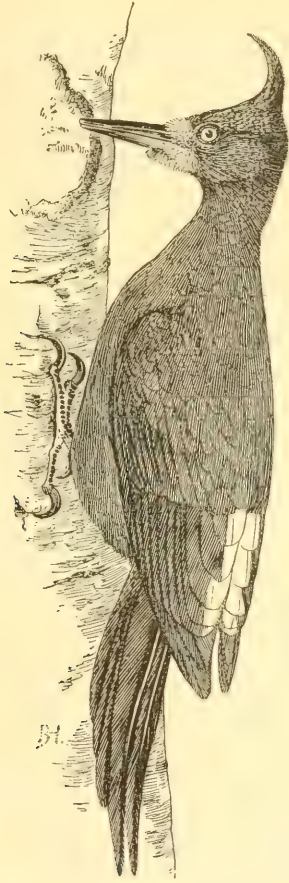


FIG. 378. *Ipocrantor magellanicus*, adult female, P. U. O. C. 7758. One-third natural size.

turbed and thrown out of the balance of their economy by slight invasions of the regions they affect; the destruction of a few forest trees or the cutting of much timber or fuel appears to be the signal for their departure and abandonment of territory where they were once a feature.

This is well attested by all the naturalists who have been thrown in contact with these birds, and a few extracts are here appended to emphasize this exodus of the birds at widely separate points, all seemingly from

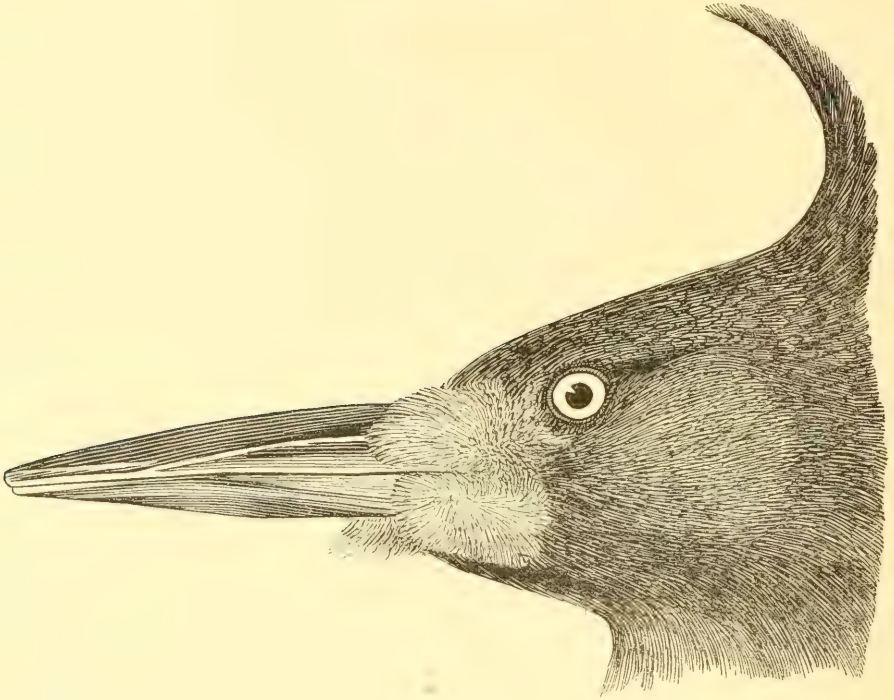


FIG. 379. *Ipocrantor magellanicus*, adult female, P. U. O. C. 7758. Head natural size.

the one cause, as well as to give a further glimpse of the kind of life this woodpecker leads.

Cunningham,¹ writing of his experience at Sandy Point in 1866, says: "Two of the party gained a momentary glimpse of a fox in the gorge through which the river, already referred to, flows; and we saw a pair of large woodpeckers—the plumage of the female of which was black, while the male was provided with a scarlet crest—run spirally up the stem of a tree, tapping the bark as they went. This species, the *Campephilus Ma-*

¹ Nat. Hist. Str. Magell. 1871, p. 81.

gellanicus, first, I believe, described by Captain King, was only met with at Sandy Point, and that but during our first season; for as the colony extended, and a considerable amount of timber was in consequence felled,



FIG. 380. *Ipocrantor magellanicus* bill, natural size.

several species of birds became very scarce, probably retiring into the fastnesses of the forest. Two circumstances specially arrested my attention in the subsequent examination of several specimens of this woodpecker—viz.,



FIG. 381. *Ipocrantor magellanicus* foot, natural size.

the enormous quantities of parasitic Anoplura occurring on the feathers, greatly exceeding in number those found on any other birds, with the exception of some of the carrion-feeding hawks; and the extreme tenacity with which the skin adhered to the muscles of the body, neck, and head,—

requiring to be carefully dissected off, and adhering to the crown of the skull almost as intimately as periosteum."

A. A. Lane says:¹ "This is an inhabitant of the forests of Southern Chili, and probably peculiar to them, unless found on the eastern side of the Andes. I believe it does not extend north of Arauco, and in this latter province only occurs inland. I could get no positive proof of its existence in Chiloe, but it probably occurs in parts of it which are still under forest. I never met with *Colaptes pitius* and *Dendrocopus lignarius* in the virgin forest, except about clearings, but the present species, on the contrary, does not occur out of it. On this account it is not often obtained, and is consequently considered to be somewhat a *rara avis*, though pretty well known by the name of 'el Carpintero' or 'Carpintero grande.'

"The feet and legs are grey, the claws black, and the iris is orange-rufous. The iris of the female is much redder than that of the male, and I was told by a Chilean that this was invariably the rule.

"Owing to the destruction of the forest by encroaching settlers, these birds have been driven back towards the interior, and are therefore scarcer on the coast. I was fortunate only on a few occasions in meeting with them whilst in the province of Valdivia. I believe they always go in pairs, like the 'Pitigüe,' but frequently two or three pairs go together. They have not a loud call, like the Pitigüe, but make curious rasping and chuckling noises, such as might be heard from Magpies. The noise they make hammering away the bark can be heard a good way off. I have seen large holes made by them in the trunk of a growing tree, but could not ascertain the object, as these were not sufficiently large for nesting, and must have occasioned more labour than the bird could be expected to exert in its ordinary feeding operations."

Order PASSERIFORMES.

Sharpe, Cat. Bds. Brit. Mus. iii. p. 1 (1877); Sharpe, Hand-List Bds. iii. p. 4 (1901).

Suborder MESOMYODI.

Sclater, Cat. Bds. Brit. Mus. xiv. p. 1 (1888); Sharpe, Hand-List Bds. iii. p. 4 (1901).

¹ Ibis, pp. 48-49, 1897.

Division TRACHEOPHONÆ.

Slater, Cat. Bds. Brit. Mus. xiv. p. 1 (1888); Sharpe, Hand-List Bds. iii. p. 4 (1901).

Family PTEROPTOCHIDÆ.

Slater, Cat. Bds. Brit. Mus. xv. p. 337 (1890); Sharpe, Hand-List Bds. iii. p. 4 (1901).

Genus SCYTALOPUS Gould.

Scytalopus Gould, P. Z. S. 1836, p. 89, type *Scytalopus fuscus* Gould = *Motacilla magellanica* Gmelin.

Geographical Range.—Costa Rica, Colombia, Venezuela, Bolivia, Peru, Chili, Ecuador, southern Brazil; Patagonia; Tierra del Fuego; Falkland Islands.

SCYTALOPUS NIGER (Swainson).

Platyrus niger Swainson, Anim. in Menag. p. 323 (1837) (Chili).

Scytalopus magellanicus Auct. nec Gmelin.

Description.—Adult male, Colln. Acad. Nat. Sci. Phila. 59304, Mt. Pichincha, Ecuador, April 26, 1911, S. N. Rhoads coll. Length, 4.60 inches; wing, 2.30; tail, 1.68; tarsus, .85; culmen, .40. Dark plumbeous, slightly lighter below. Only one specimen in a series of five from this locality shows any variation from this uniform coloration. It is a female and has the edges of the outer primaries brown and very much worn, while the flanks and lower abdomen are barred rather obscurely with cinnamon brown and black. The bill of this species is decidedly heavier than in *S. magellanicus*.

This widely ranging species occurs from Colombia to Chili along the Andes and Dr. R. Dabbene records it from the wooded regions about Lake Nahuel Huapi (El Hornero, 1919, i, p. 262) where it occurs with *S. magellanicus*. It may also occur at other localities within our limits but it was not collected by the Princeton expedition, nor have I examined any Patagonian specimens. For many years it was confused with *S. magellanicus* and it is difficult to determine to which species many of the published notes refer. The distinctness of the two species has been clearly demonstrated by Menegaux and Hellmayr (Bull. Mus. d'Hist. Nat. 1905, p. 379) and by Chapman (Auk, 1915, p. 411).

SCYTALOPUS MAGELLANICUS (Gmelin).

Magellanic Warbler, Latham, Gen. Syn. II, pt. 2, p. 464 (1783: Tierra del Fuego).

Motacilla magellanica Gmelin, Syst. Nat. I, p. 979 (1788), ex Lath.

Scytalopus fuscus Gould, P. Z. S. 1836, p. 89 (Straits of Magellan).

Pteroptochos albifrons Landbeck, Arch. fur Naturg. 1857, p. 273 (Chili).

Scytalopus obscurus King, Zool. Journ. iii, p. 429 (1828) (Straits of Magellan).

Description.—Adult male, P. U. O. C. 7709, Punta Arenas, Chili, January 4, 1898, A. E. Colburn coll. Length, 4.25 inches; wing, 2.05; tail,



FIG. 382. *Scytalopus magellanicus*, ♀ 7711. About two-thirds natural size.

1.30; culmen, .38; tarsus, .70. Plumbeous throughout, slightly lighter below, washed above with cinnamon brown, brighter on the edges of the primaries and on the inner secondaries and tertials which have more or less black banding; feathers of the back with obscure black subterminal bands; flanks and lower abdomen barred with black and ochraceous buff; tail more or less barred above. There is some variation in the amount of brown in the nine males in the series obtained by the expedition at Punta Arenas and some have small ochraceous dots at the end of the ter-

tials and some of the secondaries. Three females average browner than the males, but there is no marked difference in either size or color between the sexes.

Some individuals of each sex exhibit the silvery white dots or bars on the crown which Chapman (Auk, 1915, p. 407) has shown are purely individual and not dependent upon either sex or age.



FIG. 383. *Scytaiopus magellanicus*, ♂ 7710. About two-thirds natural size.

Geographical Range.—Patagonia from Lake Nahuel Huapi to Tierra del Fuego and the Falkland Islands, in the Andean Forest Zone.

This wren-like bird was taken and recorded by the naturalists of the Princeton Expeditions at Punta Arenas, where it was very abundant and in the Andes of southern Patagonia, near the headwaters of the Rio Chico de Santa Cruz.

The bird is common and occurs in the dense forests and in the wooded regions where it skulks about and is oftener heard than seen; it is one of the characteristic birds of the Patagonian region, but as yet little is known as to its breeding habits, general life history and even its two phases of plumage referred to in the citations preceding may be found on further study to constitute two allied species.

Darwin writes: "It is common near Port Famine in Tierra del Fuego, and on the west coast in the thickly wooded islets of the Chonos Archipelago. It has found its way over to the Falkland Islands, where, instead of inhabiting forests, it frequents the coarse herbage and low bushes, which in most parts conceal the peaty surface of that island. In general appearance the *Scylalopus fuscus* might at first be taken for a *Troglodytes*, but in habits it is closely allied to the several species of *Pteroptochos*. In a skulking manner, with its little tail erect, it hops about the most entangled forests of Tierra del Fuego; but when near the outskirts, it every now and then pops out, and then quickly back again. It utters many loud and strange cries: to obtain a good view of it is not always easy."

Mr. James L. Peters (Bull. Mus. Comp. Zoöl. lxxv, No. 9, p. 310) writes: "On February 3 several were heard in the cane thickets bordering the trail from Nahuel Huapi to the Lago de los Cantaros, and occasionally a small form appeared momentarily, either flitting across the trail or showing itself through an opening in the dense cane." He adds that these remarks may apply to *S. niger* as the two are practically indistinguishable in the field.

Genus SCELORCHILUS Oberholser.

Type.

Scelorchilus Oberholser, Auk, 1923, p. 327. *Pteroptochos rubecula* Kittlitz.

Pteroptochos Auct. nec Kittlitz, Mem.

Acad. Imp. Sci. St. Petersb. Savants

Étrangers, I, October, 1831, p. 178 (=

Hylactes King, type being *P. megapodius* Kittlitz by designation of Gray,

1840, List Gen. Birds, p. 19).

Geographical Range.—Chili, western Argentina and Patagonia.

SCELORCHILUS RUBECULA (Kittlitz).

Pteroptochos rubecula Kittlitz, Mem. Ac. Imp. Sc. Petersb. 1831, p. 179 (Concepcion).

? *Pteroptochos rubecula hylonympha* Peters, Proc. N. E. Zool. Club, viii, p. 45, March 21, 1923 (Lake Nahuel Huapi).

? *Pteroptochos rubecula nemorivaga* Wetmore, Univ. Calif. Publ. in Zool. Vol. 21, p. 333 (June 16, 1923) (Port Otway, Straits of Magellan, Chili).

Description.—Adult male, 85316 Mus. Comp. Zool. Bareloche, Argentina, February 2, 1921, J. L. Peters. Total length, 7.00 inches; wing, 3.01;

culmen, .52; tail, .80; tarsus, 1.40. Above rich olive-brown, somewhat grayer on the head; throat and breast orange tawny, rest of under parts barred buffy white and black, light bars becoming browner on flanks and under tail coverts an orange tawny stripe from lores over the eye, lower lid buffy white, ear coverts gray with white shaft lines, wings and tail olive brown, gray bases to body plumage are everywhere in evidence. Legs and feet dusky, bill blackish.

Geographical Range.—Chili south to Straits of Magellan.

The specimens upon which Dr. Wetmore based his *P. r. nemorivaga*, one of which I have seen, are unquestionably darker. Dr. C. E. Hellmayr regards both this and Mr. Peters' race *P. r. hylonympha* as indistinguishable from *P. rubecula* and pending further studies of the group I place them all together, my description being from one of Mr. Peters' specimens. Mr. Peters says: "The babblers are characteristic birds of the forested slopes about Lake Nahuel Huapi. Their favorite haunts are small dense tangles or thickets which have grown up over rotten logs. Here they live in the half dark interior, emerging but seldom and quickly scurrying back at the approach of danger. Their note is a loud, chuckling laugh, given generally just as one is passing by a thicket, and is most startling," (Bull. Mus. Comp. Zool. lxx. No. 9, p. 311.)

The Princeton Expeditions did not come across this species.

Genus RHINOCRYPTA Gray.

Type.

Rhinocrypta Gray, List Genera of Birds, 1841, p. 25 *Rhinomya lanceolata*.

Rhinomya Iss. Geoffr. and d'Orbigny, Mag. de

Zool. 1832, Ois. pl. iii (nec Robineau Desvordy, 1830)

Rhinomya lanceolata.

Rhinornis Gistel, Naturg. Thierreichs Höh. Schul.

1848, p. x *Rhinomya lanceolata*.

Geographical Range.—Northern Patagonia; Argentina north to Catamarca and southern Brazil.

RHINOCRYPTA LANCEOLATA (Geoffr. & d'Orb.).

Rhinomya lanceolata Geoffrey and d'Orbigny, Mag. de Zool. 1832, Ois pl. iii (Rio Negro).

Description.—Male adult, P. U. O. C. 8972, Rio Negro, N. Patagonia. July, 1896. From the collection of the Museo La Plata. Total length,

8.50 inches; wing, 3.40; culmen, .50; tail, 3.70; tarsus, 1.15. Feathers of the crown and occiput prolonged into a crest. Entire head, crest, sides of face and ear coverts rufescent brown, each feather with a conspicuous white shaft line, those on the crest feathers, especially the anterior ones, narrowly edged with dark brown; chin, throat, breast and middle of abdomen grayish white, ashy gray on the sides of the breast with a large chestnut patch on each side almost meeting across the abdomen; back and upper surface of wings and tail olive brown (Saccordo olive of Ridgway), tail with a terminal dull black band about an inch broad; thighs under tail coverts darker olive brown, crissum tinged with chestnut.

Female said to be similar.

Geographical Range.—Northern Patagonia and Argentine Republic north to Catamarca and reported from southern Brazil.

This notable bird does not, so far as known, occur in the part of Patagonia explored by the Princeton Expeditions. Darwin in his travels says he only met with it on the Rio Negro and it is not probable that it extends its range far south of the extreme north of Patagonia. This is one of the bush-building birds which construct covered nests, conspicuous for their size, and entered by a small opening on the side. The birds appear to have feeble powers of flight and are largely terrestrial, living in thickets and rarely seen away from cover. Its native name is "Gallito." Mr. Peters (Bull. Mus. Comp. Zool. lxxv, No. 9, p. 310) writes: "This is a common and very characteristic resident of the zone of the Grease Bush in the valleys of the Rio Colorado and the Rio Negro. The appearance of a stranger is greeted by a series of characteristic notes, difficult to describe, but once heard rarely forgotten. It is strictly terrestrial, the wings being short, soft and rounded but the feet are large and well muscled. The Gallito presents a ridiculous appearance when seen dashing from cover to cover across a short open space, the tail is carried at an angle of from 70 to 80 degrees; the greater the speed the greater the angle."

W. H. Hudson writes: "I found it exceedingly numerous in the thickets near to the town of Carmen; but following up the river it becomes scarcer. It is in its habits an amusing bird, scarcely possessing the power of flight, but so ready to take alarm, swift of foot, and fond of concealment, that it is often very difficult to get sight of it. No sooner do they spy out an intruder in the thicket than the alarm is spread, each bird hopping up into a bush, and uttering incessantly, at intervals of

three or four seconds, a loud, hollow chirrup, and at times a violent scolding cry, several times repeated. If the bird finds himself approached, he immediately springs to the ground and runs off with amazing rapidity to a safe distance. Then he again ascends a bush and resumes the angry note. Three or four times I have seen one raise itself from the ground, and fly several yards with a low feeble flight; but whenever I chanced to come on one in an open place I found that I could overtake it running, without the bird being able to raise itself. They often fly down from a bush, but always ascend it by hopping from branch to branch.

"The nest is built in the centre of a bush, from four to six feet above the ground; it is domed, has a small entrance, and is constructed entirely of dry hair-like grass. They lay four white eggs" (P. Z. S. 1872, p. 543).

Genus TELEDROMAS Wetmore and Peters.

Type.

Teledromas Wetmore and Peters, Proc.

Biol. Soc. Wash. 35, p. 41, March

20, 1922 *Rhinocrypta fusca* Scl. & Salv.

Geographical Range.—Argentina and Patagonia.

TELEDROMAS FUSCUS (Scl. & Salv.).

Rhinocrypta fusca Sclater and Salvin, Nomencl. p. 76, 161 (Mendoza).

Description.—Adult male, 283893 Biol. Survey Colln. U. S. Dept. Agriculture, Rio Negro, Argentina, Nov. 26, 1920, Alexander Wetmore. Total length, 6.30 inches; wing, 2.90; culmen, .51; tail, 2.71; tarsus, 1.23. Above, pale brownish gray (wood brown of Ridgway), becoming slightly tinged with pinkish or tawny on the crown and ear coverts; a white line above the eye, below dull white, with obscure dusky shaft stripes on the throat and breast; central pair of tail feathers like the back, others dusky, edged with rufous brown, the outermost pair almost entirely of this color, bill and feet black.

Geographical Range.—Argentina and lower Rio Negro Valley in Patagonia.

This Argentine species was found at San Antonio, at the head of the Gulf of San Matias, by Mr. James L. Peters. He states that it is similar to the preceding species in attitude and manner of carrying the tail when running, and is wholly terrestrial. It differs however in lacking the loud cries of the other species.

Genus *HYLACTES* King.

Type.

Hylactes King, P. Z. S. 1830, p. 15 *H. tarnii*.*Geographical Range*.—Straits of Magellan, region of Patagonia and Chili; the wooded parts of western Patagonia; central and northern Chili.*HYLACTES TARNII* (King).*Hylactes tarnii* King, P. Z. S. 1830, p. 15 (Chiloe and Port Otway).*Megalonyx ruficeps* d'Orbigny and Lafresnaye, Syst. Av. i. p. 15.*Description*.—Female adult, P. U. O. C. 7782, Pacific slope of the Cordillera, Patagonia, March 12, 1897. Total length, 10.50 inches; wing, 4.50; culmen, .78; tail, 3.80; tarsus, 1.70. Crown from base of bill toFIG. 384. *Hylactes tarnii*, 7782. Shape of wing and details of quills.

occiput chestnut, rest of head, throat, neck and intercapulum dark lead gray, feathers slightly lighter on the margin, upper surface of wings and center of back washed with olive brown, some of the feathers tinged with chestnut terminally, most of the lower parts, rumps and sides of the body chestnut, abdomen, flanks and under tail coverts barred with blackish, this color predominating on the under tail coverts, feathers of the abdomen also centered with black; upper tail coverts dark chestnut, tail dull black. Feathers of rump and flanks long and dense. Bill and feet black; eyes "yellowish brown."

A male in the collection of the Academy of Natural Sciences of Philadelphia is exactly similar.

Geographical Range.—Wooded parts of western Patagonia and southern Chili as far north as Valdivia and Lake Nahuel Huapi; the Island of Chiloe and the Chonos Archipelago, and to about 50° S. Lat.

Mr. Hatcher and his corps of assistants only encountered the Barking Bird once during their travels; this is the more easily understood when we remember that most of their efforts were outside of the forest region proper of Patagonia. This is one of the birds restricted by its economy

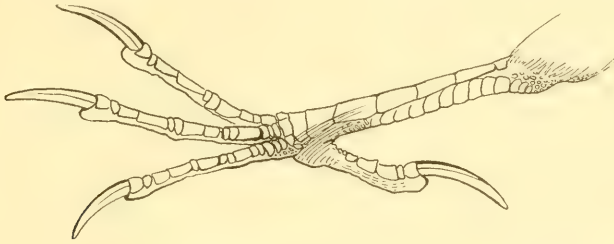


FIG. 385. *Hylactes tarnii*, 7782. Details of foot, natural size.

to a forest life and while terrestrial in habit does not so far as known ever leave the deeper woods, except where the undergrowth amounts to an impenetrable obstacle; in such localities they are said to affect the vicinity of cultivated grounds and where the brush and *quila* grow on the banks of rivers they are also found in the Andes of the south and west of the Cordillera; but thus far no examples have been obtained from the eastern portions of Patagonia.

Mr. Peters found it in the vicinity of Lake Nahuel Huapi, where "it is less retiring than *Scelorchilus* and does not frequent such dense thickets. One's attention is generally attracted by the note, a loud, liquid chuckle, and the bird is soon discovered running along the top of a fallen log or hopping clumsily about the lower branches of the underbrush." (Bull. M. C. Z. lxx, No. 9, p. 313.)

Darwin writes of it: "The *P. Tarnii* is abundant in all parts of the Island of Chiloe, where it is called by the native Indians, *guid-guid*; but by the English sailors, the barking-bird. This latter name is very well applied, for the noise it utters is precisely like the yelping of a small dog. When a person is walking along a pathway within the forest, or on the sea-beach, he will often be surprised to hear on a sudden, close by him, the bark of the *guid-guid*. He may often watch in vain in the thicket, whence

the sound proceeds, in hopes of seeing its author, and if he endeavour, by beating the bush, to drive it out, his chance of success will be still smaller. At other times, by standing quietly within the forest, the *guid-guid* will fearlessly hop close to him, and will stand on the trunk of some dead tree, with its tail erect, and strange figure full in view. It feeds exclusively on the ground, in the thickest and most entangled parts of the forest. It rarely takes wing, and then only for short distances. It has the power of hopping quickly and with great vigour; when thus awkwardly proceeding, it carries its short tail in a nearly erect position. I was informed that the *guid-guid* builds a nest amongst rotten sticks, close to the ground." (Voyage of Beagle, Birds, pp. 70-71, 1841.)

Cunningham found it at Gray Harbor, Wellington Island, and says: "It was observed both in the Gulf of Penas and at Halt Bay in the course of a former survey. With its little wings, long body-feathers, short tail, and great legs and feet, it presents a most grotesque appearance." (Nat. Hist. Str. Magell, 1871, pp. 347-348.)

A. A. Lane says of this species in the Chilian forest: "On first encountering them at Maquegua I spent hours waiting in their haunts with scarcely any success, and used to sit in the *quila* all day, with my gun ready, without even getting a view, although I frequently heard them in close proximity. Their most characteristic song is a series of descending notes on a chromatic scale, which appears to be the same as that of the 'Turco' in the central provinces. I thought at first it was the same bird, as it is equally remarkable for the force and distinctness with which the song is uttered. It also gives a weird cackle, somewhat like the sounds produced by *Pteroptochus rubecula*, but harsher and more rapidly uttered. The first time I heard this note I was crossing a steep *quebrada* in the dusk, and whilst climbing by means of the shrubs the call resounded abruptly about a few yards off, causing me the most complete amazement, as I could not understand any living creature, unless of considerable size, making such a noise; and although I examined the place intently, and listened carefully, I could get no trace of the individual, and I felt convinced, if of the size I imagined, it could not thus get away without my knowing; so I was much perplexed until I found out the owner of this mysterious voice.

"It has another note (one of alarm), which more resembles the cluck of a hen, pronounced abruptly and intermittently. When the habits of

the bird are thoroughly known to a collector he may act on this as a means of getting a shot. I found, where plentiful in the forests near Rio Bueno, that the birds often seated themselves on the top of the *quila* and commenced this note. There were usually a pair together, as it was the breeding season, and they probably had a nest near. I used to creep gradually on to them, with as little noise as possible (though in such dense growth this usually amounts to a good deal, in spite of all precautions), and generally got a shot, but invariably had to go very close; otherwise I could not see them at all, and indeed I seldom saw one openly; but one gets used to catching a glimpse of them through the bush, and they are easily killed. They appear to feed exclusively on insects, which they search for on the ground, amongst the decayed vegetable matter, scratching a good deal like gallinaceous birds. I was told that they nest in a hole burrowed in the ground, and lay two eggs." (Birds of Chili, Ibis, pp. 42-44, 1897.)

Family DENDROCOLAPTIDÆ.

Sclater, Cat. Bds. Brit. Mus. xv. p. 2 (1890); Sharpe, Hand-List Bds. iii. p. 45 (1901).

Subfamily FURNARIINÆ.

Sclater, Cat. Bds. Brit. Mus. xv. p. 3 (1890); Sharpe, Hand-List Bds. iii. p. 45 (1901).

Genus GEOSITTA Swainson.

Type.

Geositta Sw. Class. B. ii. p. 317 (1837); Sclater, Cat.

Bds. Brit. Mus. xv. p. 5 (1890); Sharpe, Hand-List

Bds. iii. p. 45 (1901) *G. cunicularia*.

Geobamon Burm. J. F. O. viii. p. 249 (1860) *G. rufipennis*.

Geographical Range.—Peru, Bolivia, Chili; Argentina and Patagonia to the Straits of Magellan; Tierra del Fuego.

GEOSITTA CUNICULARIA CUNICULARIA (Vieill.).

(Plate II)

Alauda cunicularia Vieillot, Nouv. Dict. I, p. 369 (1818) Rio de la Plata.

Description.—Male adult, P. U. O. C. 7771, Punta Arenas, Chili, December 13, 1897, J. B. Hatcher. Total length, 6.15 inches; wing, 3.92; culmen, .65; tail, 2.42; tarsus, .95. Vinaceous brown above (wood brown

of Ridgway) shaded with darker tones of the same, a light superciliary stripe; each feather of the crown with distinct dark center and those of the back darker subterminally, lighter on the shaft; wing coverts and tertials narrowly edged with paler; primaries and secondaries largely tawny, the latter with broad subterminal blackish bands; under wing coverts pinkish cinnamon; tail dusky vinaceous, tawny at base, this area increasing to the outermost feather which is tawny with the outer web white; rump vinaceous buff; lower parts white slightly tinged with vinaceous, a more or less defined collar of dusky spots across the chest, and some dusky dots on the ear coverts and in a line on each side of the throat.

This bird is one of a series of five evidently worn breeding birds. In full fresh plumage the vinaceous tint is stronger and the colors more blended. Such a specimen is 7767 near Coy Inlet, October 2, 1896, male, which is nearly uniform wood brown above.

A young bird (P. U. O. C. 7768, Cape Fairweather, ♀, February 10, 1898, A. E. Colburn) apparently in the plumage of the first winter (i.e. following the juvenal plumage) is more ashy above, with lighter edgings to wing feathers more prominent and crown and hind neck speckled with buffy white.

Male and female seem to be exactly alike.

Geographical Range.—Uruguay, Argentina, Chili and Patagonia; Tierra del Fuego.

Geositta cunicularia was found by the Princeton naturalists to be common and probably resident at Punta Arenas. A worn female was obtained on February 10, 1898. At Cape Fairweather and near Coy Inlet fully molted birds in fine fresh plumage were secured.

The nests are placed in burrows excavated by the birds in steep banks, the burrows being long or deep and parallel to the ground surface above. Wherever the Vizcacha (*Lagostomus trichodactylus*) finds a congenial site for living on the pampas the *Geosittas* take advantage of the burrows made by these animals, using such as are more or less abandoned by the Vizcachas for nesting sites and roosting places; a swallow also forms part of this society, at least during the breeding season, and the communal life is as noticeable as that of the prairie dogs and owls on the great plains of North America.

Mr. Peters says: "It is a very common resident of the dry sandy plains (of northern Patagonia). It is distinctly terrestrial; I do not recall ever

having seen it perch. Its note is rather loud and musical repeated in syllables. Easily recognized by its small size, pale coloration and by the white V, formed when the tail is spread" (Bull. M. C. Z. lxx. no. 9, p. 312).

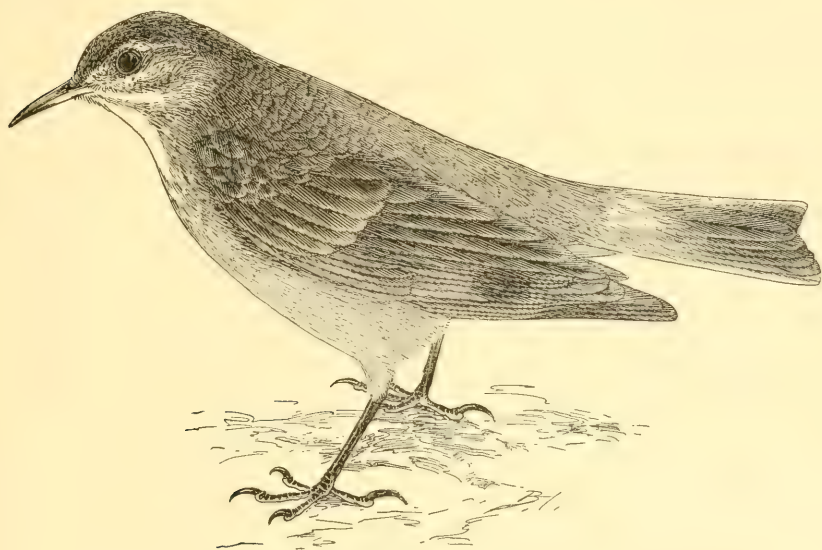


FIG. 386. *Geositta cunicularia*, ♂, about three-fourths natural size.

According to Barrows (Bull. Nuttall Orn. Club, viii. October 1883) it is very abundant in winter at Concepcion, Uruguay, "and may be seen running about singly or in pairs on dry, grassy or gravelly places. It is strictly terrestrial and when running about singly it may be driven before one like a chicken. It has a rolling call similar to that of the Downy Woodpecker (*Picus pubescens*) but weaker, and a nervous way of flirting its wings, raising and dropping the tail which is common to many other birds of this group. It was abundant at Bahia Blanca where it was occasionally seen running over the roofs of the houses. Of its breeding habits I know nothing, but most of the birds undoubtedly breed farther south."

Darwin writes of it: "This bird has a considerable geographical range. On the eastern side of the continent it is found from about 40° (for I never

saw one in the southern districts of Patagonia) northward to at least 30° , and perhaps much farther. On the western side its southern limit is the neighbourhood of Concepcion, where the country becomes dry and open, and it ranges throughout Chile (specimens were procured from Valparaiso) to at least as far north as Lima, in lat. 12° , on the coast of Peru. I may here observe, that the northern limit of all birds, which are lovers of dry countries, such as this *Furnarius* and some of the species of *Minus*, is not probably at Lima but near Cape Blanco, 10° south of the Equator, where the open and parched land of Peru blends (as it was described to me) rather suddenly into the magnificent forests of Guayaquil. This *Furnarius* constantly haunts the driest and most open districts; and hence sand-dunes near the coast afford it a favorite resort. In La Plata, in northern Patagonia, and in central Chile, it is abundant: in the former country it is called Casarita, a name which has evidently been given from its relationship with the Casaro, or *Furnarius rufus*, for, as we shall see, its nidification is very different. It is a very tame, most quiet, solitary little bird, and like the English robin (*Sylvia rubecula*) it is usually most active early in the morning and late in the evening. When disturbed it flies only to a short distance; it is fond of dusting itself on the roads; it walks and runs (but not very quickly), and generally by starts. I opened the stomachs of some, and found in them the remains of Coleoptera, and chiefly Carabidæ. At certain seasons it frequently utters a peculiar, shrill but gentle, reiterated cry, which is so quickly repeated as to produce one running sound. In this respect, and in its manner of walking on the ground, and in its food, this species closely resembles the Casari, but in its quiet manners it differs from that active bird. Its nidification is likewise different for it builds its nest at the bottom of a narrow cylindrical hole, which is said to extend horizontally to nearly six feet under ground. Several of the country people told me, that when boys, they had attempted to dig out the nest, but had scarcely ever succeeded in getting in to the end. The bird chooses any low bank of firm sandy soil by the side of a road or stream. At the settlement of Bahia Blanca the walls are built of hardened mud; and I noticed one, enclosing a courtyard, where I lodged, which was penetrated by round holes in a score of places. On asking the owner the cause of this, he bitterly complained of the little Casarita, several of which I afterwards observed at work. It is rather curious, that as these birds were constantly flitting backwards and forwards over the low wall, they must be quite incapable

of judging of distance or thickness even after the shortest circuitous route, for otherwise they would not have made so many vain attempts." (Voyage of Beagle, Birds, pp. 65-66, 1841.)

GEOSITTA ANTARCTICA Landbeck.

(Plate II)

Geositta antarctica Landbeck, Wiegmann's Arch. für Naturg. (46 Jahrg.) i. p. 274 (1880) (Tierra del Fuego).

Geositta longipennis Ridgway, Proc. U. S. N. M. xii. 1889, p. 133 (1890) (Elizabeth Island, Straits of Magellan).

Geositta brevirostris Scott, Bull. Brit. Orn. Club, x. no. lxxi. p. lxii. 1900 (Mt. Tiger, Patagonia).

Description.—Female adult, P. U. O. C. 7769, near Mt. Tiger, August 14, 1896 (type of *G. brevirostris* Scott). Total length, 6.25 inches; wing, 4.25; culmen, .55; tail, 2.36; tarsus, .75. Above uniform wood brown, below white tinged with vinaceous and with an obscure band of dusky mottling across the chest, and a vinaceous superciliary stripe. This bird is in full fresh plumage and compared with *G. cunicularia cunicularia* in similar condition differs in having tertials, wing tips and dark areas on tail feathers much blacker, wing edgings not so conspicuous, light areas on remiges much paler, vinaceous instead of tawny, and the dark band on secondaries almost obsolete, rump patch nearly white. With wings and tail closed, the resemblance of these two species is very striking, though the longer wing and shorter bill of the present form easily distinguish it.

The fact that the seasonal plumages of each of these birds differ more than either one does from the corresponding plumages of the other species has doubtless had much to do with the confusion that has arisen in connection with this species. Only a single specimen was obtained.

Geographical Range.—Southern Patagonia; Tierra del Fuego, Elizabeth Island, Straits of Magellan and Mount Tiger (Cape Fairweather region southeastern Patagonia).

GEOSITTA RUFIPENNIS RUFIPENNIS (Burmeister).

Geobamon rufipennis Burmeister, Jour. für Ornith. viii. Jahrg. No. 46, p. 249, No. 94 (July 1860) ("Paraná" = Cordillera de Mendoza).

Description.—6783 Coll. Acad. Nat. Sciences Phila. Chili, Gelless Colln. Total length, 6.20 inches; wing, 4.05; culmen, .56; tail, 2.28; tar-

sus, 1.00. Above vinaceous brown exactly as in *G. cunicularia cunicularia* except that the rump is uniform with the back; below vinaceous buff ("avellaneous" of Ridgway), darker than in *G. cunicularia cunicularia* and without the dark spots across the breast; under wing coverts and feathers of the side beneath the wing mahogany red; chestnut areas on wing and tail much brighter than in *G. c. cunicularia* ("burnt sienna" of Ridgway), outer web of outermost tail feathers the same, dark areas decidedly blacker and secondaries, primaries and rectrices tipped with pale buff, pale edgings on upper wing coverts and secondaries obsolete; a distinct buffy white superciliary stripe.

Geographical Range.—Bolivia and Argentina south to El Escorial, Huanuluan and Talagapa, Patagonia, where it was found by Peters.

This species was not found by the Princeton Expedition, as it ranges only to northern Patagonia. Mr. Peters, who found it at Huanuluan, El Escorial and Talagapa, states that "in actions it is precisely like the preceding species (i.e. *G. cunicularia cunicularia*), but is markedly larger; the V-shaped mark on the tail is chestnut and the under wing coverts a rich brown. Moreover it is invariably found in rocky situations, whereas *G. c. cunicularia* frequents the dry sandy plains (Bull. M. C. Z. lxx. no. 9, p. 312).

Genus UPUCERTHIA, Geoffroy St.-Hilaire.

Type.

Upucerthia Geoffr. St.-Hil. N. Ann. d. Mus. i. p. 393 (1832) *U. dumetaria*.

Geographical Range.—Peru, Bolivia, Ecuador and Chili; Argentina and Patagonia, to the Straits of Magellan.

UPUCERTHIA DUMETARIA DUMETARIA Geoffroy St.-Hilaire.

(Plate IV)

Upucerthia dumetaria Geoffroy St.-Hilaire, N. Ann. Mus. Hist. Nat. p. 394, 1832 (Patagonia).

Description.—Male adult, P. U. O. C. 7940, Rio Chico, Patagonia, March 12, 1896, A. E. Colburn. Total length, 9.00 inches; wing, 4.05; culmen, 1.28; tail, 2.95; tarsus, .98. Above uniform wood brown, feathers of the crown with obscure lighter centers; lores dull white, superciliary stripe vinaceous, ear coverts streaked with buffy white and dusky; under parts dull white tinged with vinaceous, strongly so across the breast, which is pale cin-

namon; sides of body and under tail coverts darker, throat nearly white, all the feathers from chin to breast with narrow brown edgings producing a shell pattern. Wings nearly uniform with the back with more or less tawny on the inner webs of the innermost primaries and on the outer webs of the secondaries and basally on the inner web, tips slightly darker; central tail feathers like the back but slightly tawny, others more dusky, the three outer with pale tawny tips, nearly white on the outermost in which this color extends over the entire outer web.

Geographical Range.—Patagonia. Specimens were obtained by the Princeton naturalists at Coy Inlet in October 1896, and at Rio Chico and Cape Dos Vacos in March and February 1898. The length of the bill in these birds varies considerably, ranging from 1.08 to 1.28. Peters found it to be resident in northern Patagonia and not uncommon. "At San Antonio it was fairly common in the bushes growing close to the edge of the salt-marsh. In western Rio Negro I found it on the plains, up the ravines and gullies, but always among bushes. It feeds on the ground where its long curved bill is of great assistance in capturing the insects which seem to form a large part of its diet. It is not unusual to find a place in the lee of some bush where one of these birds has been feeding, scratching and tearing up the surface over an area of several square feet. Its usual note is a series of loud non-musical syllables given on a descending scale." (Bull. M. C. Z. lxx. no. 9. p. 313.)

W. H. Hudson writes of the habits of the species as follows: "A pair of these birds (male and female) appeared in a field near my house this winter; and a month after first seeing them I succeeded in shooting both. The male proved to be a trifle the larger; but in plumage they were alike. They reminded me in all their motions of the *Cinclodes fuscus*, being, like it, shy and ever ready to take wing, and their flight being irregular, rapid, and near to the earth. The bird also sometimes alights on dry stalks, but more often on the ground, hopping and jerking the tail in a startled manner, and running with extraordinary swiftness over the bare places."

UPUCERTHIA PROPINQUA Ridgway.

Upucertbia propinqua Ridgway, Proc. U. S. N. M. no. xii. p. 134 (1889)
(Gregory Bay, Straits of Magellan).

Description.—U. S. N. M., 1889, Gregory Bay, Straits of Magellan.
"Similar to *U. dumetaria* Geoff. and d'Orb., but much grayer above, less

tinged with brown beneath, the squamate markings on the breast much more distinct, tail feathers (except the middle pair) much blacker, with ochraceous, more restricted, inner web of secondaries decidedly dusky for terminal half, tawny spaces on inner webs of primaries much more sharply defined against much darker color of terminal portion, and the bill shorter and proportionately broader at base."¹

Geographical Range.—Southernmost Patagonia, Straits of Magellan. Not recorded by the Princeton party.

UPUCERTHIA RUFICAUDA (Meyen).

Ochetorhynchus ruficaudus Meyen, Nov. Act. Acad. L. C. xvi. Suppl. p. 81, pl. xi (1834) (Maipu, Chili).

Upucerthia montana d'Orb. and Lafr. Syn. Av. p. 22.

Description.—Adult male, 156334 Amer. Mus. Nat. Hist., Mendoza, February 1871. Total length, 7.85 inches; wing, 3.20; culmen, .95; tail, 3.05; tarsus, 1.00. Above cinnamon, grayer on the head and becoming tawny on the rump and middle tail feathers, others tawny on the outer web and largely black on the inner; wings cinnamon with a wash of tawny; under parts white on the throat and breast, abdomen streaked with cinnamon, flanks and under tail coverts white, superciliary ear coverts cinnamon, bill dusky, feet black.

Geographical Range.—Bolivia, Chili and western Argentina into Patagonia. Does not occur in the region covered by the Expedition.

Genus CINCLODES Gray.

Type.

Cinclodes G. R. Gray, List Gen. B. p. 16 (1840) *C. patagonicus*.

Geographical Range.—South America; confined to the higher elevations of the Andes in their northern range; descending to sea level in Chili and Patagonia.

CINCLODES FUSCUS FUSCUS (Vieillot).

Anthus fuscus Vieillot, Nov. Dict. d'Hist. Nat. xxvi. p. 490 (1818), based on "*Alondra parda*" of Azara (plains of Montevideo and Buenos Aires).

Description.—Adult male, P. U. O. C. 7656. Total length, 7.20 inches; wing, 4.10; culmen, .65; tail, 3.00; tarsus, 1.05. Above wood brown,

¹ From Ridgway's original description, Proc. U. S. Nat. Mus. xii. p. 134, 1889.

slightly grayer on rump and tail; below pale vinaceous or buffy white, browner on the sides; feathers of the throat and fore part of neck white tinged strongly with vinaceous at the sides of the neck and all tipped narrowly with brown, a white stripe under the ear coverts which are brown streaked with white, and a buffy white superciliary; a white and tawny speculum on the middle of the wing involving the inner primaries, secondaries with a broad medium blackish band, below which, basally, they are strongly vinaceous; outer tail feathers darker than the middle pair, the three outermost with vinaceous tips, involving most of the outer web of the outermost.

This bird is in worn breeding plumage; another taken June 10 in full fresh plumage is much richer in color, almost snuff brown above and vinaceous below, darker on the breast, becoming almost tawny on the sides of the neck, wing tints all brighter.

Geographical Range.—From southern Brazil and Chili to southern Patagonia.

Mr. Hatcher and his assistants met with *Cinclodes fuscus* at the several points where they explored southern Patagonia and also secured specimens of the bird at the headwaters of the Rio Chico de Santa Cruz in the Patagonian Cordillera. The birds were especially common about Punta Arenas in December, the breeding season, and a good series was secured at this point.

Birds taken at Punta Arenas in worn plumage are much bleached in appearance. This is particularly noticeable in the superciliary stripes, and in the exposed margins of the feathers of the wings; these have become by wear or exposure or both nearly or quite pure white as compared with the warm cinnamon tint of the eye stripes and exposed borders of the wings in birds of the same kind taken as near by as Rio Gallegos in May. These latter birds are presumably in full winter dress and contrast strongly with birds which have just passed through the breeding season. There is, however, some individual variation in this color, as one bird taken at Punta Arenas on December 17 is as brightly cinnamon in tone on the wings as the Rio Gallegos birds taken in May, having just completed the moult.

Beside the wide variation in color there is a considerable range in size of wing and bill in this series; the total length obviously is variable, but this factor is so uncertain in skins as not to warrant conclusions. The birds from Rio Gallegos do not reach quite the size of the largest Punta Arenas specimens. A bird taken in the Rio Chico Cordillera on February

27, 7662, has the wing 3.84; the tail 2.90, and the bill 0.60; this is a pronouncedly cinnamonous individual; the sex was not determined.

The smallest of the Straits birds which have been examined are larger than the birds taken at high altitudes and it may be that separation into at least geographic races may be found expedient; for the present and with the material available the birds from the several regions are included under this head as a tentative position to work from.

While it seems possible that the birds referred to by the many students who have seen them alive are true *Cinclodes fuscus*, the biography of the species as here given is restricted to observation in the vicinity of the Straits of Magellan; and even here there may be opportunity for question as to just what bird is meant unless the collector has carefully studied the group. It is likely however that aside from the difference in habit caused by local conditions these birds will be found to have similar life histories even though they be specifically distinct. (Scott Ms.)

W. H. Hudson says of it: "The *Cinclodes fuscus* is also a lively bird, and quick in its motions on the ground, but when perched on trees sits motionless in one posture. They are quarrelsome and sportive, and when pursuing each other utter a trilling excited cry. Occasionally on a warm day they attempt to sing, darting up from the ground as they utter their notes; but their voice is as destitute of melody as their plumage is of brilliant hues."

Mr. Peters did not find it at Rio Colorado or San Antonio during August, but they appeared with the first wave of migrants from the north on September 6 at Huanuluan and all had passed by early November. It was fond of wet meadows or small brooks. (Bull. M. C. Z. lxx. no. 9, p. 313.)

CINCLODES PATAGONICUS PATAGONICUS (Gmelin).

(Plate VII)

Motacilla patagonica Gmelin, Syst. Nat. i. (ii.), p. 957 (1789), based on the "Patagonian Warbler" of Latham (Tierra del Fuego).

Description.—Male adult, P. U. O. C. 7755, Punta Arenas, Chili, December 18, 1897, J. B. Hatcher. Total length, 7.50 inches; wing, 3.90; culmen, .78; tail, 3.25; tarsus, 1.15. Above mummy brown, blacker on the head and tail, edges of secondaries slightly tinged with tawny and a tawny and white bar across the inner primaries; below deep mouse-gray, each feather with a median streak of white, becoming broader and more

triangular on the upper breast, throat and sides of neck white, most of the feathers narrowly edged with gray, feathers of the lower abdomen whitish at the tips, flanks browner, ear coverts dark brown, streaked with white, long superciliaries white tinged with buff anteriorly; two outermost tail feathers with tawny white tips. Other specimens are somewhat brighter with the primary coverts strongly tawny on the outer webs. Sexes alike.

Geographical Range.—Tierra del Fuego and Straits of Magellan.

The naturalists of the Princeton Expeditions found this bird to be very common at Punta Arenas, Chili, and noted it or collected it on every visit they made to that point. The birds do not appear to be migratory anywhere within the territory where they occur, but though this is one of the commonest representatives of the genus, and known for over one hundred years, yet accurate data are still wanting to give anything like definite accounts of its distribution. The record of this species from Bolivia (P. Z. S. 1879, p. 619) is cited in most recent works but is presumably incorrect; with the data at present available it is probable that this species ranges as far north as 45° S. latitude and that an allied form replaces it farther to the northward.

The birds breed in natural cavities beneath tree roots, or in banks or caves, and in the Straits of Magellan December represents the height of the breeding period. Fully fledged nestlings are reported from Cold Harbour in the Straits early in January. [Scott Ms.]

Darwin's account of this species is here appended: "On the 20th of September, I found, near Valparaiso, the nest of *C. Patagonicus*, with young birds in it: it was placed in a small hole in the roof of a deep cavern, not far from the bank of a pebbly stream. Three months later in the summer I found, in the Chonos Archipelago (Lat. 45°), a nest of this species, placed in a small hole beneath an old tree, close to the sea-beach. The nest was composed of coarse grass and was untidily built. The egg rather elongated; length 1.11 of an inch, width in broadest part .8 of an inch; perfectly white." (Voyage of Beagle, Birds, pp. 68-69, 1841.)

Cunningham says of it at Punta Arenas: "On the rocks a pretty little gray bird, with a white line on each side of the head, the *Cinclodes Patagonicus*, very common in the Strait and Channels, was hopping about, approaching very close to us at times. This little creature has the curious habit of lighting on the floating masses of kelp not far from the shore, and searching the fronds for its food, which consists principally of marine ani-

mals. On the west coast of South America it extends, at least, as far north as Valparaiso. A second species of the genus obtained in the Strait, where however it does not appear to be nearly so common as the former, was the *Cinclodes fuscus*." (Nat. Hist. Str. Magell. 1871, p. 264.)

CINCLODES PATAGONICUS RUPESTRIS (Kittlitz).

(Plate VIII)

Opetiorhynchus rupestris Kittlitz, Mem. Acad. Sci. St. Petersburg. I, p. 188, tab. viii (1831) (Chili = Valparaiso).

Cinclodes molitor Scott, Bull. Brit. Orn. Club. x. no. lxxi. April 30, 1900, p. lxii (1900) (Chili).

Description.—Darker than *patagonicus* and somewhat smaller with the white throat more abruptly defined, white streaks below narrower.

Geographical Range.—From Valparaiso, Chili, and Mendoza, Argentina, south through most of Patagonia, and Dabbene records one from Sloggett Bay, Tierra del Fuego.

Mr. J. L. Peters writes: "This appears to be the resident *Cinclodes* of western Rio Negro. . . . About Lake Nahuel Huapi they are common along the wooded shores of the lake and in the vicinity of running water." (Bull. M. C. Z. lxxv. No. 9, p. 314.)

CINCLODES OUSTALETI HORNENSIS Dabbene.

Cinclodes oustaleti hornensis Dabbene, Physis, t. III, March 17, 1917, p. 58 (Hermite Island, Tierra del Fuego).

Description.—Differs from *C. patagonicus* in its smaller size, weaker bill, and in having the under parts less streaked, and the center of the abdomen white. From *C. oustaleti* to the north it differs in the darker brown of the upper parts and in the white streakings of the under tail coverts.

Geographical Range.—Southern Chili, Cape Horn region. Not found by the Princeton naturalists.

CINCLODES ANTARCTICUS ANTARCTICUS (Garnot).

Certhia antarctica Garnot, Annales des Sciences Naturelles, vii. p. 45, note 1, (1826) (Isles Malouines).

Furnarius fuliginosus Lesson, Man. d'Ornith. ii. p. 15 (1828) (Les îles Malouines).

Description.—Total length, 7.20 inches; wing, 4.10; culmen, .80; tail, 3.10; tarsus, 1.05. Darker than *C. patagonicus*, uniform brown below

but very slightly lighter than above, with no streaks on the breast or belly; feathers of the throat with slight rusty buffy tips; light area on wing feathers almost obsolete.

Geographical Range.—Falkland Islands.

C. antarcticus is confined, as I have every reason to believe, to the Falkland Islands. . . . These birds live almost exclusively on the sea beach, whether formed of shingle or rock, and feed just above the surf on the matter thrown up by the waves. The pebbly beds of large rivers sometimes tempt a solitary pair to wander far from the coast. They may frequently be seen walking on the buoyant leaves of the *Fucus giganteus*, at some little distance from the shore. [Scott Ms.]

CINCLODES ANTARCTICUS MACULIROSTRIS Dabbene.

Cinclodes antarcticus maculirostris Dabbene, *Physis*, t. III. March 17, 1917, p. 59 (Hermite Isle, Tierra del Fuego).

Description.—Differs from *C. a. antarcticus* in larger size and still darker coloration; much blacker both above and below, with speckles on the throat less distinct; bill yellow at base of lower mandible.

Geographical Range.—Hermite and Vanderlandt Islands at the southernmost extremity of Cape Horn. Not found by the Princeton party.

Genus ENICORNIS Gray.

Type.

Enicornis, G. R. Gray, *List Gen. B.* 1840, p. 17 *E. phœnicura*.

Geographical Range.—Chili and Patagonia; chiefly maritime but found about the larger water courses and lakes of the interior of Patagonia.

ENICORNIS PHOENICURA (Gould).

(Plate X)

Eremobius phœnicurus Gould, *Zool. Voy. "Beagle," Birds*, p. 69, pl. 21 (1841). (Port Desire, Port St. Julian, Santa Cruz.)

Henicornis wallisi Scott, *Bull. Brit. Ornith. Club*, x. no. lxiii. 1900 (Arroyo Eke, Patagonia).

Description.—Adult female, P. U. O. C. 7939, May 24, 1898, Upper Rio Chico. Total length, 7.30 inches; wing, 2.95; culmen, .80; tail, 3.80; tarsus, .80 (Type of *wallisi*). Upper parts including wings snuff

brown washed with ashy, becoming rufescent on the crown, tail darker, more ruddy brown, becoming dull black toward the tip, basal portion largely chestnut, decreasing inwardly and wanting on the middle pair (said to extend onto those feathers in the type specimen from Chupat. The bird here described is the type of *H. wallisi* Scott which does not seem to differ from the diagnosis of *phænicurus* in any other particular); below pale gray, with broad whitish shaft stripes on the feathers of the breast; throat white, flanks and under tail coverts pale buff; grayish white superciliaries and ear coverts tinged with chestnut. Other specimens of *phænicurus* show but a trace of chestnut on the central tail feathers while other specimens of *wallisi* show some chestnut. Evidently this is a variable character.

Geographical Range.—Patagonia.

It seems probable that this species is restricted to the sea coast region of Patagonia from about 50° South Latitude northward. Durnford met with what he concluded was this bird in his journey through Central Patagonia. The Princeton Naturalists secured this species only from the foothills of the Patagonian Andes. Darwin found the bird at several points on the coast and subjoined are his remarks on what little he observed in regard to its habits and mode of life. He also speaks of seeing this species in the "eastern valleys of the barren Cordillera, near Mendoza."

Darwin writes: "This bird, though forming a well-marked genus, is in many respects, even in plumage, allied to *Furnarius* and *Opetiorhynchus*,—for instance, in the streak over its eyes, in the red band on its wings extending obliquely from the body to the third primary—and to some of the species of these genera in its rather plumose feathers. In its general manners, the same resemblance, together with some differences, always struck me. It lives entirely on the ground, and generally in dry sterile situations, where it haunts the scattered thickets, and often flies from one to another. When skulking about the bushes it cocks up its tail, imitating in this respect *Pteroptochos* and *Rhinomya*. Its cry is shrill, quickly reiterated, and very similar to that of several species of *Furnarius* and *Opetiorhynchus*. The stomach of one which I opened was full of Coleoptera. I procured specimens from three places on the coast of Patagonia; namely, Port Desire, St. Julian, and Santa Cruz; but it is nowhere common. I likewise saw it at a considerable elevation in the eastern valleys of the barren Cordillera, near Mendoza."¹

¹ Voyage of "Beagle," Birds, p. 70, 1841.

Mr. Peters found it to be a common resident in arid northwestern Patagonia: "This is another thoroughly terrestrial species, seldom taking wing unless closely pressed; it runs rapidly over the brushy, stony plain, dodging behind rocks or doubling under cover of a bush, the tail carried at an angle." He found a nest on October 3 on the ground by a cactus. (Bull. M. C. Z. lxx. no. 9, p. 314.)

Subfamily SYNALLAXINÆ.

Sclater, Cat. Bds. Brit. Mus. xv. p. 29 (1890); Sharpe, Hand-List Bds. iii. p. 51 (1901).

Genus APHRASTURA Oberholzer.

Type.

Aphrastura Oberholzer, Pro. Acad. Nat.

Sci. Phila. March 1899, p. 210; Class

Bds. ii. 1838, p. 313 *Motacilla spinicauda* Gmelin.

Geographical Range.—Chili and Patagonia to 40° South Latitude; Tierra del Fuego; the Falkland Islands; Juan Fernandez and Masufuera.

APHRASTURA SPINICAUDA (Gmelin).

Motacilla spinicauda Gmelin, Syst. Nat. i. 1783, p. 978 (based on the "Thorn-tailed Warbler" of Latham, Gen. Syn. ii. pt. 2, p. 463, pl. lii). (Tierra del Fuego.)

Synallaxis tupinieri Lesson, Voy. Coq. Zool. i. p. 665, pl. 29, fig. 1 (1826).

Oxyurus ornatus Swainson, Anim. in Manag. p. 324 (1837).

Oxyurus australis Swainson, Jard. Nat. Libr. Birds ii. p. 318 (1837).

Motacilla seticauda Forster, Descr. Anim. p. 328 (1844). (Tierra del Fuego.)

Description.—Adult male, 7616 P. U. O. C., Punta Arenas, Chili, December 15, 1897. J. B. Hatcher. Total length, 5.75 inches; wing, 2.50; culmen, .40; tail, 2.95; tarsus, .78. Whole top of the head dark brown, nearly black, some of the feathers with narrow rufous shaft streaks; broad superciliaries extending back to the neck, tawny, connected over the bill by a narrow whitish frontlet, sides of face and ear coverts dusky; back cinnamon brown becoming russet or chestnut on the rump, wings blackish, lesser coverts broadly edged with tawny, greater coverts narrowly edged

with buffy white, tertials cinnamon on the outer webs, secondaries with a patch of tawny on the outer webs, primaries with spots of tawny forming a diagonal band across the middle; tail graduated, the middle pair longest, all with the barbs much prolonged in slender spines, dark brown except the middle pair, which are largely chestnut, the three outer pairs with a large oval terminal chestnut spot; lower surface white, cinnamon buff on the flanks, thighs and under tail coverts.

Geographical Range.—Patagonia from Tierra del Fuego to about 40° South Latitude or farther in Chili, recorded from the Falkland Islands.

Peters says: "This is another representation of the Magellanic fauna occurring in northwestern Patagonia only in the forests of the east Andean slopes. Generally found in small companies of half a dozen or more individuals, both adults and immature were present together. It is a very active species, somewhat wren-like in actions, and with a considerable variety of notes, squawks and scolds for the most part." (Bull. M. C. Z. lxx. no. 9, p. 315.)

This is a characteristic bird of the forest regions of southern South America, and appears to be a resident form, not changing its habitat at all with the varying seasons. Mr. Hatcher and his assistants collected it at every point where they explored the wooded regions of Patagonia as well as at Sandy Point, where this little creeper-like bird was particularly abundant at all times when collections were made there. In this region it must breed in November, as fully fledged young, except for the tail, were taken commonly at Sandy Point during the last two weeks of December. Except in the breeding season the birds are gregarious and go about in small flocks hunting through the trees in a tit-like way. They are said also to feed at times on the ground in the woods, hunting among dead leaves for their insect prey. The birds do not according to general testimony climb the trunks or branches of trees, a habit which would seem to be indicated by the creeper-like tail and general look. An old male taken December 20 was in the moult.

A. A. Lane says of it: "This is one of the species characteristic of the great southern forest district. It has various local names, such as 'Colilargo' and 'Tijerito.' I do not know how far north these birds extend. They are plentiful in Arauco and all through the more southerly provinces, especially in the forest-covered districts. . . .

"They are, I think, resident wherever they occur. They feed like Tits

usually in flocks, and have a piping call-note, also some chattering and twittering utterances, which are frequently heard. I never found the nest, but observed young ones near Rio Bueno about February.

"Sometimes large numbers are seen in the forest feeding low down and frequently on the ground, searching amongst dead leaves or decayed wood for insects, which they appear to live on. They are, however, as a rule arboreal." (Birds of Chili, Ibis, p. 38, 1897.)

M. J. Nicoll says of its occurrence: "In the extreme west of the Straits of Magellan this species is almost the only land-bird to be seen. While walking through the dripping untrodden forests I several times had an individual of this species following me the whole time, uttering its monotonous shrill chatter. It is curious that, although possessing stiff-pointed rectrices, it never seems to use its tail like our Common Creeper (*Certhia*), but hops about the bushes somewhat as a Tit does; at least that is my experience, and I have often watched it for a considerable time." (Orn. Jour. Voy. round World, Ibis, Jan. 1904, p. 45.)

Genus SYLVIORTHORHYNCHUS Des Murs.

Type.

Sylviorthorhynchus Des Murs, Icon. tab. 45 (1847) . . . *S. desmursi*.

Geographical Range.—Southern Chili and the Straits of Magellan; southern Patagonia.

SYLVIORTHORHYNCHUS DESMURSI Gray.

Sylviorthorhynchus desmursi Gray, Hist. Chil. Zool. i. p. 316, pl. 3 (1847). (Valdivia, Chili.)

Schizura maluroides Cabanis, Arch. für Naturg. 1847, p. 338.

Description.—Adult male, 6813 Acad. Nat. Sci. Philada., Chili. Total length, 8.50 inches; wing, 1.85; culmen, .60; tail, 6.00; tarsus, .90. Upper parts uniform tawny brown ("antique brown" of Ridgway); tail of six rigid spine-like feathers with decomposed webs very narrow, except at the end of the central pair, where they are somewhat widened, second pair a little more than half the length of the central feathers and outer pair (apparently lost in this specimen) said to be very short, a whitish superciliary and white lores; under parts buff, darker and browner on the sides and flanks, center of abdomen white.

Geographical Range.—Patagonia and southern Chili. This remarkable bird was not found by the Princeton expedition.

A. A. Lane found it in Chili and writes of its habits as follows: "These peculiar birds, as a rule, occur only in the forest districts of the south, but I was informed that they migrate a short distance to the north in the winter-time.

"They frequent the densest undergrowth, especially the *quila*, and are rarely seen, as they are very retiring by nature. They have a somewhat shrill piping note, heard more frequently at sunset, and kept up continuously in the same key. It was the only note I heard them utter. They are termed 'Colilargo' by the natives.

"I observed some young ones, having apparently just left the nest, about the middle of February near Rio Bueno. There were at least four in company." (Birds of Chili, p. 39, 1897.)

M. J. Nicoll says: "I saw and shot two examples of this curious wren-like bird at Gray's Harbour. They were in the most dense undergrowth, and were so tame that I could not get more than four or five yards from them: the first I blew to pieces and the other I lost in the undergrowth. The enormously long tail is held straight out behind, *not* cocked up. The cry is much like the call-note of our Wren." (Orn. Jour. Voy. round World, Ibis, Jan. 1904, p. 46.)

Genus *PHLÆOCRYPTES* Cabanis & Heine.

Type.

Phlæocryptes Cab. et Hein. Mus. Hein. ii. p. 26 (1859) . *P. melanops*.

Geographical Range.—Bolivia, Paraguay, Peru, Chili; Uruguay, Argentina, Patagonia.

PHLÆOCRYPTES MELANOPS MELANOPS (Vieillot).

Sylvia melanops Vieillot, N. Dict. d'Hist. Nat. xi. p. 232 (1817), based on Azara's "Escapulario chorreado" (Paraguay).

Synallaxis dorsomaculatus d'Orb. et Lafr. Syn. Av. p. 21.

Description.—Adult male, P. U. O. C. 7945, Rio Chico de Santa Cruz, Patagonia, March 16, 1898. A. E. Colburn Coll. Total length, 5.25 inches; wing, 2.25; culmen, .60; tail, 1.95; tarsus, 1.05. Upper parts dull black becoming olive brown on the lower back and rump, the upper tail coverts edged with black; each feather of the back with a white shaft streak becoming buff on the hind neck, and sides of the neck strongly buff; a buffy superciliary stripe below which is a black stripe; wings dull

black varied with chestnut or tawny, forming a broad diagonal band involving all but the two outermost primaries; tail graduated, outer feathers the shortest, central feathers olive brown with a terminal black shaft streak, others black with a tawny terminal area decreasing in size toward the center; under parts white tinged with buff, sides of the body and flanks brownish.

Geographical Range.—Paraguay, Uruguay and Peru south to Chili and Patagonia at least to Rio Santa Cruz.



FIG. 387. *Phlæocryptes melanops* ♀. 7944. About two-thirds natural size.

The naturalists of the Princeton Expeditions found this bird on the upper waters of the Rio Chico de Santa Cruz in March; here the birds were apparently common as three were secured in two successive days. The birds look much like exaggerated long-billed marsh wrens [*Telmato-dytes palustris* (Wilson)], so much so that one is disposed at once to picture a marsh in connection with this dendrocolaptine bird. In fact it does frequent the vicinity of water, particularly where there are rushes or thick grasses along the stream. The Dendrocolaptidæ, as they are manifested in southern South America, appear closely to approximate in habit such widely separated forms as wrens, desert wrens, creepers, nuthatches, titmice, reed warblers and perhaps others among the group of perching song birds.

In northern Patagonia Mr. J. L. Peters found this species "a common summer resident, confined exclusively to the reed beds. Every patch of reeds, no matter how small, always has its quota. The note most frequently given is a wren-like scold, but it also gives a call which sounds like the noise produced by striking two dead reeds together." It arrived at Huanuluan September 10, being among the early migrants. (Bull. M. C. Z. lxx. no. 9, p. 315.)

Genus LEPTASTHENURA Reichenbach.

Type.

Leptasthenura Reichenb. Handb. p. 160 (1853) . . . *L. ægithaloides*.

Geographical Range.—Colombia, Ecuador, Bolivia, Peru and Chili; Brazil, Uruguay, Argentina and Patagonia.

LEPTASTHENURA ÆGITHALOIDES ÆGITHALOIDES (Kittlitz).

Synallaxis ægithaloides Kittlitz, Mem. Acad. St. Petersburg. (Sav. Etrang.) i. p. 187, pl. 7, 1831 (Valparaiso).

Description.—Adult male, 6824 Acad. Nat. Sci. Phila., Valparaiso, Chili. J. K. Townsend. Total length, 5.30 inches; wing, 2.28; culmen, .30; tail, 3.00; tarsus, .70. Head crested feathers dull black streaked with tawny cinnamon, lores and hind neck spotted with buffy white; rest of upper surface snuff brown; wings similar, inner feathers tipped with buffy white, a broad tawny or chestnut band across the secondaries involving both webs and continued on the outer webs of the inner primaries; tail graduated, center feathers longest and sharp-pointed, black, outer ones tipped with grayish white including narrow outer web; lower parts dull white strongly washed with brown, darker on sides and flanks, whiter on the throat, a necklace of dark brown spots across the breast, bill yellow at the base of lower mandible.

Geographical Range.—Chili and southwestern Peru to northern Patagonia.

LEPTASTHENURA ÆGITHALOIDES PALLIDA Dabbene.

Leptasthenura ægithaloides pallida Dabbene, El Hornero, ii. p. 135, 1920 (Mailén, western Chubut, Patagonia).

Description.—Similar to *L. ægithaloides ægithaloides* but paler throughout, especially noticeable in the much grayer upper surface and paler streaks on the crown.

Geographical Range.—Andes of southern Argentina and Patagonia. Obtained at Rio Gallegos by the Princeton Expedition.

According to Peters "this form is a common resident in northern Patagonia—San Antonio, Huanuluan and Bariloche, and also south of Maquinchas. It is very tit-like in its actions, gleaning actively among the leaves and terminal twigs of the bushes, pausing a moment to give a little chattering scolding note before flying to the next bush." (Bull. M. C. Z. lxx. no. 9, p. 315.)

LEPTASTHENURA PLATENSIS Reichenbach.

Leptasthenura platensis Reichenbach, Handbk. (1850) p. 160 (Rio de la Plata).

Description.—Similar to *L. a. pallida* in general color tone, light streaks on head still paler, mainly buffy white; tawny area of wing more restricted; tail feathers much broader, lighter and grayer, light terminal areas on outer feathers vinaceous instead of gray or white.

Geographical Range.—Argentina, Uruguay and recorded from Patagonia.

O. V. Aplin writes of its occurrence in Uruguay: "I used to see this little long-tailed bird twisting about among the branchlets of a tala in the monte or among the rocks, or in an acacia or other tree in the quinta, uttering a series of sharp tit-like notes; its habits and appearance (apart from its color and elevated crest-feathers) are not unlike those of a long-tailed tit." (O. V. Aplin, Ibis, p. 182, 1894.)

Genus SIPTORNIS Reichenbach.

Siptornis Reichenb. Handb. d. sp. Orn. p. 171 (1853) . ^{Type.} *S. striaticollis*.

Geographical Range.—Central America and throughout South America to Patagonia and the Straits of Magellan; Tierra del Fuego and the Falkland Islands.

SIPTORNIS MODESTA (Eyton).

Synallaxis modestus, Eyton, Jardine's Contr. Orn. 1851, p. 159 (Bolivia?).

Description.—Adult female, 7664 P. U. O. C., Upper Rio Chico, Patagonia, March 24, 1897. Total length, 5.37 inches; wing, 2.52; culmen, .45; tail, 2.40; tarsus, .75. Above uniform grayish brown (wood brown of Ridgway), wings edged with paler and a tawny bar across the second-

aries and inner primaries; a buffy white superciliary stripe; tail darker brown, each feather bordered with rufous, increasing in extent outward, until this color occupies most of the short lateral feathers; under surface pale cinereous washed with buff, whiter on the throat, where there is a pale rufous spot in the adult.



FIG. 388. *Siptornis modesta*, ♂. 7664. About one-half natural size.

Geographical Range.—Bolivia, Chili and Argentina, into northern Patagonia (Huanuluan and El Escorial—Peters). Found on the upper Rio Chico in March.

SIPTORNIS SORDIDA SORDIDA (Lesson).

Synallaxis sordida Lesson, Rev. Zool. 1839, p. 105 (Chili).

Synallaxis brunnea Gould, Voy. Beagle, Birds, p. 78 (1841) (Port Desire).

Description.—Adult male, 7696 P. U. O. C., February 20, 1898, Santa Cruz, Patagonia. Total length, 6.15 inches; wing, 2.30; culmen, .40; tail, 2.90; tarsus, .85. Similar to *S. modesta* but lower back rump and wings tinged with tawny, especially the last; tail with the two outermost feathers entirely tawny and usually the third as well; throat spot of adult pale fulvous, lacking in the young.

Geographical Range.—Chili and northwestern Patagonia (Bariloche—Peters). Reported also from the Chupat Valley.

Hudson says: "This little bird is very common in the woods of Patagonia, goes in pairs, and builds a large nest of sticks with a narrow long entrance, and lays four pointed white eggs; but there is as little in its habits or language, as in its form or color, to distinguish it from many other members of the extremely monotonous tribe to which it belongs." (P. Z. S. 1872, p. 543.)



FIG. 389. *Siptornis sordida*, ♂. 7996. About one-fourth natural size.

E. W. White, speaking of its occurrence at Cordova, Argentina, says: "The abode of this bird seems to be the highlands, where it loves to frequent small shrubs and brushwood, into the deepest shade of which it penetrates. When startled, its flight is quick and dipping from one bush to another, uttering meanwhile a pretty trilling cry." (P. Z. S. 1883, p. 39.)

SIPTORNIS SORDIDA FLAVIGULARIS Gould.

Synallaxis flavigularis Gould, Voy. Beagle, Birds, p. 78, pl. 24 (1841)
(Bahia Blanca: Santa Cruz).

Description.—Adult male, 284502 Biol. Survey Colln., U. S. Dept. of Agriculture, General Roca, Rio Negro, Argentina, November 27, 1920, Alexander Wetmore. Total length, 5.80 inches; wing, 2.25; culmen, .41; tail, 2.98; tarsus, .70. Above dull wood brown (Ridgway), wings somewhat rufescent, tail darker brown, two outer pairs of feathers largely rufous as well as the outer web of the next pair; below pale ashy flanks and under tail coverts browner; a patch of dull orange on the upper throat, each feather minutely tipped with black, lores dull white, bill and feet black, under mandible pale at base.

Female similar, but throat spot paler and tips largely white; immature birds lack the orange spot, the upper throat being white.

Geographical Range.—Patagonia and southern Argentina (Buenos Aires, Mendoza, Rio Negro).

In the Huanuluan-Maquisuchao region Mr. Peters found it to be the common Spring-tail frequenting the thicker and denser growths of bushes from the end of October to the end of December.

SIPTORNIS BAERI Berlepsch.

Siptornis baeri Berlepsch, Bull. Brit. Orn. Club, xvi. p. 99, 1906 (Cosquin, Cordova).

Description.—Adult male, 284498 Biol. Survey Colln., U. S. Dept. of Agriculture, Pampa Victoria, Argentina, December 28, 1920, Alexander Wetmore. Similar to *S. sordida flavigularis* but tail much shorter, bill shorter and decidedly heavier, lower edge of throat-patch often blackish and feathers only slightly tipped with black, if at all; wings grayer, less tawny, but crown tinged with tawny.

Adult female has throat spot smaller and lacks the black, feathers tipped with white; immature female shows it only faintly and immature male has a blackish spot with only a suggestion of orange. Immature birds also have obscure transverse dusky streaks to the feathers of the breast.

Total length, 5.50 inches; wing, 2.37; culmen, .39; tail, 2.40; tarsus, .83.

Geographical Range.—Western Argentina as far south as the Rio Colorado (Peters) and Rio Negro (Doering).

SIPTORNIS PATAGONICA (d'Orbigny).

Synallaxis patagonica d'Orbigny, Voy. Amer. Mérid. Ois. p. 249 (1835-1844) (Rio Negro).

Description.—Adult male, 284473 Biol. Survey Colln., U. S. Dept. of Agriculture, General Roca, Rio Negro, Argentina, November 25, 1920, Alexander Wetmore. Total length, 5.35 inches; wing, 2.20; culmen, .42; tail, 2.68; tarsus, .82. Very similar in general appearance to *S. baeri*, with the same heavy bill, but throat patch larger and black with prominent white tips to the feathers, brown wash on the flanks more extensive and tail much more black, the tawny color being restricted to the outer web of the outer pair of feathers and a very narrow edging to the next two pairs.

Geographical Range.—Patagonia (Rio Negro to Chubut).

Mr. Peters found it at San Antonio and states that it is an active species, though rather secretive and quick to take alarm.

Hudson says: "this bird resembles the last (*flavicularis*) in color and size, but is distinguished by its short tail, which it carries elevated like the wren. It hops with great rapidity over the bare ground, and feeds much about the roots of dwarf bushes." (P. Z. S. 1872, p. 544.)

SIPTORNIS SULPHURIFERA (Burmeister).

Synallaxis sulphurifera Burmeister, P. Z. S. 1868, p. 636 (Buenos Aires).

Description.—Adult male, 284986 Biol. Survey Colln., U. S. Dept. Agriculture, Rocha, Lazcano, Uruguay, February 5, 1921, Alexander Wetmore. Total length, 5.02 inches; wing, 2.20; culmen, .50; tail, 2.32; tarsus, .72. Above pale snuff brown, greater wing coverts edged with dull tawny, and shoulders bright tawny; the outer edge of several primaries is strongly buff; tail pale tawny, middle pair of feathers darker, superciliary and lores white, and ear coverts streaked with white, below dull white, breast obscurely spotted or streaked with dusky and a saffron yellow spot on the throat; flanks and under tail coverts light brown, bill and feet dusky, under mandible lighter at base.

The sexes do not appear to differ. An immature female collected by Dr. Wetmore is strongly suffused with tawny buff, above and below, and lacks the bright tawny shoulders.

Geographical Range.—Uruguay, Argentina and northern Patagonia (Rio Negro).

Hudson writes that this species "must be exceedingly rare in Patagonia; for this pair were the only ones I saw during my sojourn in that country, though I constantly sought for them in the most likely places. You will observe that its affinities are with the *Limnornis curvirostris*; in note and habits it also closely resembles that bird.

"The male and female keep together, and glean for insects about the roots of reeds and giant grasses, and when approached run to their tops, uttering shrill, angry notes." (P. Z. S. 1872, p. 544.)

SIPTORNIS ANTHOIDES (King).

Synallaxis anthoides King, P. Z. S. 1830, p. 30 (Straits of Magellan).

Synallaxis rufogularis Gould, Voy. Beagle, Birds, p. 77, pl. 23 (1841)
(Valleys of Southern Patagonia).

Description.—Adult female, 7941 P. U. O. C., Arroyo Eke, Patagonia, May 18, 1898, A. E. Colburn. Total length, 6.40 inches; wing, 2.65;



FIG. 390. *Siptornis anthoides*, ♂. About two-thirds natural size.

culmen, .50; tail, 2.76; tarsus, .88. Above coarsely streaked throughout with grayish brown and black, each feather being broadly centered with black; a buffy superciliary, tail dark brown, middle pair of feathers edged with

paler, three outer ones with tawny white diagonal terminal spots, involving most of the outermost; under side pale ochraceous, darker on the breast and flanks, whiter on the throat, throat and breast with minute dusky spots, a large pale fulvous spot on the upper throat, wings dull brown with a diagonal fulvous band across the middle, with paler areas on the outer webs of some of the primaries, a black band next to the fulvous one and tertials black with a buff border.

Geographical Range.—Chili and Patagonia to the Falkland Islands. At Lake Nahuel Huapi Mr. Peters found it uncommon, wary and with secretive habits. Obtained by the Princeton Expedition at Arroyo Eke, in May.

SIPTORNIS HUDSONI (Sclater).

Synallaxis hudsoni Sclater, P. Z. S. 1874, p. 25 (Conchitas).

Synallaxis sclateri Cabanis, J. F. O. 1868, p. 196 (Argentine Republic).

Description.—Adult female, 283868 Biol. Survey, U. S. Dept. of Agriculture, Lavallo, Buenos Aires, Argentina, November 9, 1920, Alexander Wetmore. Total length, 6.30 inches; wing, 2.75; culmen, .58; tail, 2.82; tarsus, .92. Feathers of the upper surface black in the center with buffy-brown wings, those of the back and the tertials with additional silvery gray edgings, base of the secondaries tawny, making a definite patch on the wing; a streak of the same on the outer web of the tertials; tail feathers black, the three outermost pairs more or less tawny and edged with gray, the middle pair largely gray, the black area restricted to a narrow shaft streak, below buffy white, flanks darker with black shaft streaks; throat spot orange tawny.

Another female has the throat spot lemon yellow with minute black tips to the feathers.

An immature bird is more strongly buff below with black shaft streaks on the breast and smaller ones on the abdomen.

Geographical Range.—Uruguay and Argentina to extreme northern Patagonia.

Peters found it rare in the regions visited by him on the Rio Negro and Rio Colorado. Durnforth reports it from the Chuput Valley.

Subfamily PHILYDORINÆ.

Sclater, Cat. Bds. Brit. Mus. xv. p. 74 (1890); Sharpe, Hand-List Bds. iii. p. 62 (1901).

Genus ANUMBIUS d'Orbigny & Lafresnaye.

Type.

Anumbius, d'Orb. et Lafr. Syn. Av. ii. p. 17 (1838) . *A. acuticaudatus*.*Geographical Range*.—Uruguay, Paraguay, Argentina and Patagonia.

ANUMBIUS ANUMBI (Vieillot).

Furnarius anumbi Vieillot, N. Dict. d'Hist. Nat. xii. p. 117 (1817),
based on Azara's "Añumbi" (Paraguay).*Description*.—Above pale grayish brown, becoming chestnut on the forehead, crown and back streaked with black; wings like the back, secondaries vinaceous on the edges, pale tawny on the inner web, tertials dark brown, middle tail feathers grayish brown, others blackish with white spots at the tips; under surface paler than above, buffy on the abdomen, a little darker on the breast with pale shaft streaks, and white on the throat, separated from the breast and auriculars by a band of small black spots.*Geographical Range*.—Southern Brazil and Paraguay to Argentina and northern Patagonia (Rio Negro and San Blas).E. W. White writes of this species: "In Salto (B. Aires), it is very numerous about the plantations on the Estancias, where it builds in the forks of high trees, usually the eucalyptus. The nest is constructed of large twigs, and is a fine structure for the size of the bird, 21 inches in height and 48 in circumference, in fact twice as great as that of *Milvago chimango*. The entrance to the nest, which is near the top, but is not right on it, and is about four or five inches in diameter and neatly rounded, leads downwards by a steeply inclined spiral passage to the bottom. The whole is thickly lined inside with hair, feathers, and wool, making a very soft, downy, and pretty nest, and one that is very difficult to pull to pieces, as the twigs are mostly thorny and strongly interlaced."There were five eggs in the one I took: their shape is elongated, considerably pointed at one end, and pure white, without spots: the only one to which it can be compared is that of *Columbula picui*; but it is more acutely pointed." (P. Z. S. 1882, p. 612.)

Genus PSEUDOSEISURA Reichenbach.

Type.

Pseudoseisura Reichenb. op. cit. p. 172 (1853) *H. gutturalis*.*Geographical Range*.—Southern Brazil to Central Patagonia.

PSEUDOSEISURA GUTTURALIS (d'Orbigny and Lafresnaye).

Anabatis gutturalis d'Orbigny, Voy. Amer. Merid. Ois. p. 257, pl. lv. fig. 3 (1835-1844) (Rio Negro, Patagonia).

Description.—Adult male, 8768 P. U. O. C., Chubut, Patagonia, July 1897. Total length, 9.20 inches; wing, 4.34; culmen, .98; tail, 4.03; tarsus, 1.32. Slightly crested, above uniform wood brown, primaries with gray edgings; tail darker brown, under parts pale brownish gray, slightly washed with vinaceous on the under tail coverts and flanks; throat white with a narrow blackish band separating it from the fore neck.

Geographical Range.—Argentina and northern Patagonia (Rio Negro, Chubut Valley, etc.).

Obtained by the Princeton party only in Chubut.

Mr. Peters (Bull. M. C. Z. lxxv. no. 9, p. 318) reports it "not uncommon in the region about Huanuluan and Maquinchao, frequenting the sheltered or moister areas where the bushes grow more luxuriantly. In habits somewhat jay-like and unlike most Tracheophones, this bird is rather inquisitive. . . . The nest is a large domed structure generally placed in a thorny bush and with a tunnel-entrance; the nesting cavity is usually lined with wool. The nests are very strongly built and force is required to gain entrance."

Hudson's account of this species is as follows: "This homely and interesting bird frequents open plains abounding in low, thorny, and widely scattered bushes, and on the approach of a traveller shows itself on the summit of a bush, with crest erect, and uttering a succession of sharp, angry chirps; it also has, when much alarmed, a shrill, trilling scream like that of the *H. univirfus*. They are seen in pairs or in families of five or six individuals at intervals during the day; the male and female perform a chorus of notes so powerful that they may be heard distinctly a mile away. Its flight is low and feeble; but it runs very rapidly on the ground, and subsists principally on insects extracted from the earth, and decayed bark about the roots of trees and shrubs. This bird builds a nest extraordinary for its size and strength; it is placed in the middle of a low, thorny, and widely spreading bush; it is perfectly round, the lower part just raised only a few inches above the ground; the depth of the whole nest is usually from 4 to 5 feet, the cavity inside is 1 foot in depth. The opening is on the side and small, and has in front of it a narrow arched gallery resting on the horizontal twigs, and 13 or 14 inches

in length. The nest is composed entirely of thick sticks, and is so compactly built that I had hard work to demolish one by thrusting the barrel of a long musket into it and prizing it up by pieces. I also, to test the strength of a nest, stood on one for some time, stamping my heel on it with great force, without injuring it in the least." (P. Z. S. 1872, p. 545.)

Subfamily MARGARORNITHINÆ.

Cf. Salvin & Godman, Biol. Centr. Amer., Aves, ii. p. 109 (1891); Sharpe, Hand-List Bds. iii. p. 73 (1901).

Genus PYGARRHICUS Burmeister.

Type.

Pygarrhicus Burm. Handb. d. Nat. p. 769 (1837) . . . *P. albigularis*.

Geographical Range.—Wooded regions of southern Tierra del Fuego, northward through the forests of southern and central Chili; the Island of Chiloe; the forests of southern and western Patagonia.

PYGARRHICUS ALBIGULARIS (King).

Dendrocolaptes albigularis King, P. Z. S. 1830, p. 30 (Straits of Magellan).

Dendrodramus leucosternus Gould, Voy. Beagle, Birds, p. 82, pl. 27 (1841) (Chiloe and southern Chili).

Pygarrhicus sitellus Lichtenstein, Nomencl. Av. Mus. Berol. p. 64 (1854) (Chili).

Description.—Adult female, P. U. O. C. 7626, Punta Arenas, Chili, December 27, 1897, J. B. Hatcher. Total length, 5.62 inches; wing, 3.18; culmen, .80; tail, 2.05; tarsus, .82. Above dark brown ("mummy brown" of Ridgway) on head and back passing into chestnut and bright rufous on rump and tail; wings dark brown with rufous edgings to the secondaries and coverts with a rufous area on the outer web of the inner primaries near the base; tail feathers rigid and with protruding spine-like tips. Under parts snowy white on throat, chest and sides of neck, middle of body white, each feather narrowly edged with brown, making a shell pattern, sides of body and flanks chestnut brown; under tail coverts brown tinged with rusty and each feather centered with white; bill somewhat upturned, lower mandible largely yellow.

Geographical Range.—Chili and western Patagonia to Straits of Magellan and Chiloe Island.

Specimens were obtained by the Princeton expedition at Punta Arenas, in December and January, and on the Pacific slope of the Cordillera near head of Rio Chico in March. One male, December 24, is in full moult.

A. A. Lane writes of this bird as follows: "This species is very characteristic of the forests of southern Chili. I did not hear of any reliable local name for it, but the German colonists call it, very correctly, the 'Baumläufer' (= Tree-creeper). The sexes appear to resemble each other.

"I do not know how far north these birds extend, but I think there would not be many north of Arauco, where I first observed them in the forest districts.

"I found them as far south as I went, apparently resident and in fair numbers. They do not appear to go far from the forest, and are usually found in it. Their habits, as regards feeding and movements, are the same as those of Woodpeckers and Tree-creepers, to which they are similar in appearance. They usually creep about the tops of high forest trees, and now and then come lower down, and at times I have seen one descend to examine logs on the ground.

"They peck with considerable force, like a Woodpecker, and seem more closely related to the Tree-creepers than to the other Dendrocolaptidæ which I observed, and from which they differ considerably both in appearance and habits.

"The note is a loud and somewhat sharp chirruping, and is frequently uttered; it generally betrays the presence of the bird." (Birds of Chili, Ibis, pp. 39-40, 1897.)

Peters found them not uncommon on wooded slopes about Lake Nahuel Huapi where in late summer or early autumn they occur in small companies. He describes the note as a "faint *tick*." (Bull. M. C. Z. lxxv. no. 9, p. 318.)

Division OLIGOMYODÆ.

Cf. Sclater, Cat. Bds. Brit. Mus. xiv. p. 1 (1888); Sharpe, Hand-List Bds. iii. p. 88 (1901).

Family TYRANNIDÆ.

Sclater, Cat. Bds. Brit. Mus. xiv. p. 2 (1888); Sharpe, Hand-List Bds. iii. p. 88 (1901).

Genus AGRIORNIS Gould.

Type.

Agriornis Gould, Zool. Voy. 'Beagle,' iii. p. 56 (1841) . . . *A. livida*.*Geographical Range*.—Andes of Ecuador, Bolivia, Peru and northern Chili; descending to sea level in southern and central Chili and in Patagonia and Argentina.

AGRIORNIS LIVIDA FORTIS Berlepsch.

Agriornis livida fortis Berlepsch, Proc. IV. Intern. Orn. Congr. London, 1905, p. 352, 1907 (Chubut Valley).*Description*.—Adult female, P. U. O. C. 7571, Rio Chico, Cordilleras, Patagonia, February 19, 1897. Total length, 11.00 inches; wing, 5.50; culmen, .92; tail, 4.60; tarsus, 1.56. Above grayish brown ("saccardo umber" of Ridgway), feathers of the crown with distinct blackish shaft stripes, those of the back with obscure or obsolete streaks of the same; wings and tail blackish, wing feathers and outermost rectrices edged with pale brown and the latter tipped with rufescent; under parts ashy on breast, washed with ochraceous, dull white on throat and strongly tawny on the abdomen and under tail coverts; throat and sides of the face streaked with black shaft stripes and a few obscure streaks on the breast; legs, feet and upper mandible black, lower mandible mainly pale horn color.*Geographical Range*.—Central and southern Cordillera of Patagonia to Tierra del Fuego.The naturalists of the Princeton Expeditions met with *Agriornis livida* at only one point in southern Patagonia, at the headwaters of the Rio Chico de Santa Cruz, where they found the bird not uncommon in the forests, and secured four specimens in late February and early March, 1897. They appear to be immature birds of the year in every case; two of the birds are much lighter than are the others and are changing from the first or nest plumage to the permanent dress of the first season; they are almost unmoulted below and have a general cinnamon suffusion prevailing here, while above they are like immature birds already described.

A. A. Lane says of it: "I only met with one specimen of this bird when on some open ground near the sea, below the town of Arauco. The ground was covered with sand-dunes and scanty bushes, amongst which the bird was flying. I saw at once it was of a species I had not

before encountered, so procured it, and searched for more, but did not find any. It appears to resemble the next species (*maritima*) closely, and is probably similar in its habits." (Ibis, p. 28, 1897.)

AGRIORNIS STRIATA STRIATA Gould.

Agriornis striata Gould, Voy. Beagle, Birds, p. 56 (1841) (Santa Cruz, Patagonia).

Agriornis microptera Gould, Voy. Beagle, Birds, p. 57, pl. xii. (1841) (Port Desire and Port St. Julian).

Description.—Adult male, 283825 Biol. Survey Colln., U. S. Dept. of Agriculture, General Roca, Rio Negro, Argentina, November 29, 1920. Total length, 8.80 inches; wing, 4.30; culmen, 1.00; tail, 4.10; tarsus, 1.40. Above ashy brown (between hair brown and drab of Ridgway), wings darker, with narrow ashy white edges to the remiges, an ashy white stripe over the eye, extending to the lores and below the eye, with a dusky streak across the middle of the lores; below pale ashy, whiter on the abdomen; throat broadly and prominently striped with black and white, three middle black stripes most conspicuous; tail blackish, the outer web of the outermost pair of feathers white; bill dusky, lower mandible mainly pale horn, feet black. Female similar but black throat stripes much narrower and somewhat broken into spots.

Geographical Range.—Argentina and northern Patagonia (Santa Cruz, Rio Negro, etc.). Not found in the region covered by the Expeditions.

Mr. Peters states that this species was "not uncommon in the vicinity of Huanuluan in the more brushy locations. It appears to be migratory. The first bird seen was on September 11 . . . fledglings were observed on several occasions during November and December 3 a nest was found which probably represented a second brood. It was placed in a thick bush, a very bulky structure lined with feathers of *Calopezus elegans* and containing three eggs white with some rusty spots at the larger end." (Bull. M. C. Z. lxx. no. 9, p. 319.)

AGRIORNIS MONTANA LEUCURA (Gould).

Plates XI and XII.

Agriornis leucurus Gould, Zool. Beagle, 1839, pl. 13 (Patagonia).

Agriornis poliosoma Scott, Bull. Brit. Ornith. Club, x. p. lv. 1900 (Arroyo Gio, Patagonia).

Description.—Adult male, P. U. O. C. 7927, May 20, 1898, Arroyo Eke, Patagonia, A. E. Colburn (type of *A. poliosoma* Scott). Total length, 9.30 inches; wing, 5.30; culmen, 1.15; tail, 4; tarsus, 1.30. Above brownish drab ("hair brown" of Ridgway), buffy white superciliaries, ear coverts and sides of the face streaked with the same; wings dark brown edged with dull white; middle tail feathers dark brown becoming white at tip, outer web of others white, dusky at base of inner ones, and inner web white for about the terminal third; under parts more ochraceous than the upper side; throat dull white streaked with blackish; under tail coverts white, crissum and flanks tinged with tawny; bill and feet black.

Geographical Range.—Patagonia (Chubut valley, Port Desire, Santa Cruz, etc.), 50 to 38° S. latitude. Only the single specimen above described was obtained by the Expedition.

Mr. Peters found it sparingly at Huanuluan and El Escorial.

Genus MYIOTHERETES Reichenbach.

Type.

Myiotheretes Reichenb. Av. Syst. Nat. t. lxvi. (1850) . *M. rufiventris*.

Geographical Range.—Western South America from Colombia southward to Peru; eastern South America from Uruguay southward to extreme southern Patagonia (Palli Aike; Rio Chico de Gallegos).

MYIOTHERETES RUFIVENTRIS (Vieillot).

Tyrannus rufiventris Vieillot, Encyc. Meth. p. 856 (1823), based on the "Pepoaza ventre roxizo" of Azara (Montevideo).

Pepoaza variegata d'Orbigny, Voy. Amer. Mérid. p. 349, pl. 39, fig. 2 (1835-1844) (Patagonia).

Description.—Adult female, P. U. O. C. 7577, near Rio Coy, Patagonia, September 30, 1896. Total length, 8.70 inches; wing, 5.90; culmen, .72; tail, 3.56; tarsus, 1.45. Above gray strongly washed with olive, feathers of the crown with obscure blackish shaft streaks; primaries black, the inner ones black on the outer web and tawny on the inner, becoming whitish toward the tip; secondaries light chestnut, broadly white toward the tip, tertials blackish with white borders, coverts gray with white borders; tail black with narrow white tip and outer web of outer pair narrowly bordered with white; throat and breast ashy gray, passing into

tawny on the abdomen, sides and under tail coverts, some of the feathers with gray shaft streaks; bill and feet black.

Worn breeding birds (January 17, 1898) are much paler and are somewhat mottled above by the exposure of darker bases to the feathers; the olive tint, too, is lost but they are always more pure ashy below than above.

Geographical Range.—Paraguay and Argentina throughout Patagonia.

This conspicuous flycatcher was taken in southern Patagonia in late September and January, both records being from nearly the same point in the extreme southeastern part of the region, Rio Coy and Palli Aike. It would therefore appear that at least some of the birds remain in this part of Patagonia throughout the year, while most representatives go further north into Uruguay in the colder months.

Both specimens of this bird collected by Mr. Hatcher and his assistants are females and are fully adult. They are much smaller in their wing measurements than are the specimens described by Dr. Sclater, his average of nine birds giving him a wing measurement of 6.7 inches (Sclater, Cat. Bds. Brit. Mus. xiv. p. 9, 1888), while neither bird from southern Patagonia exceeds 5.90 inches in wing length. It may be found that there is a separable smaller form characteristic of this part of Patagonia, but at present the material for study is not sufficient to base conclusions upon.

Genus TÆNIOPTERA Bonaparte.

Type.

Tænioptera Bp. Journ. Ac. Phil. iv. p. 380 (1825) *T. nengeta*.

Geographical Range.—South America from Peru and Brazil southward to the Straits of Magellan. Patagonia and Tierra del Fuego.

TÆNIOPTERA PYROPE PYROPE (Kittlitz).

Muscicapa pyrope Kittlitz, Mem. pres. Acad. Petersb. i. p. 191, pl. 10 (1831) (Concepcion, Chili).

Description.—Adult male, 284884 Biol. Survey Colln., U. S. Department of Agriculture, Washington, D. C., Concon, Valparaiso, Chili, April 25, 1921, Alexander Wetmore. Total length, 7.42 inches; wing, 4.37; culmen, .60; tail, 3.52; tarsus, 1.00. Above bluish gray (neutral gray of Ridgway) with a strong olive wash over head and back; wings black with broad gray edgings to the tertials and narrower gray margins to the

secondaries and greater coverts; tail gray, shafts black, feathers bordered with paler gray, outer web of outermost pair nearly pure white; throat, abdomen and lower tail coverts white, breast and sides strongly washed with gray; bill and feet black.

Sexes indistinguishable.

Geographical Range.—Chili.

A. A. Lane describes this species as follows: "I did not observe these birds until I went to Arauco, where I saw them about the hills round Coronel, Lota, and Laraquete, and in the interior, thence southward everywhere I went, and on Chiloe. They appeared very plentiful in the province of Valdivia. I should consider them a common resident in all these localities. I have always seen them singly, except when paired. It is generally known as the 'Diucon,' probably on account of its resemblance to the Diuca. . . .

"It is invariably observed on the topmost twig of a shrub or low tree, and when disturbed will fly a short distance to a similar position. The flight is undulating and buoyant. The call-note, which is constantly uttered, is very similar to that of the Bullfinch, and likewise low and subdued; it is uttered more frequently on the approach of an intruder or when its nest is threatened.

"It is strictly arboreal in its habits, but occurs both in the forest parts and round cultivated lands and orchards. Its flight is generally accompanied by a peculiar clicking noise, which is, I think, made by a snapping of the beak. One of its most characteristic habits is the capture of insects on the wing; it flies at them from its perch, to which it usually returns. I never saw one appear to miss the insect it flew at, though this flight is often very remarkable, as it will generally poise itself a moment or two in mid-air and go through some curious gyrations in regaining its perch. In such instances the snapping noise is always heard several times, perhaps, but the bird also makes it in its ordinary flight, when no insects appear adjacent.

"I have on two or three occasions remarked that these birds 'tower' or soar upwards from a perch to a height of 20 or 30 feet, and then drop down again to the spot they quitted with no apparent object. But I think this occurred at the breeding-season, and may be accounted for as a freak of the male bird when looking for a mate, as is often observed in Greenfinches.

"The nest is placed in a fork, in the stem of a shrub from 3 to 5 feet above ground. The eggs are three in number. I fancy both birds assist in the incubation. At Rio Bueno, January seemed to be their proper nesting-season, or perhaps the end of December, as I found a young bird half fledged about the second week of January. This was the only young bird I found, and I left it to get a little more forward; but on returning a few days later it was not in the nest, and I could not find it, though I knew by the old birds it was near. I believe, from the conduct of the latter, they suspected my intention and had concealed it, as it would not otherwise have left the nest so soon.

"These birds appear to feed entirely on insects caught on the wing, though perhaps they get them on branches of trees as well, but I never saw them search for food except in the air.

"I seldom heard the song of this bird, but it is occasionally indulged in by the male at the commencement of the breeding season. I cannot, however, say much as regards its vocal powers, as, though not unpleasant, the strain is so subdued as to be heard only when close at hand, and the execution is bad, being very abrupt, as if the performer would not trust his voice.

"It appears to be a delicate bird and is easily killed; I do not think it could be kept in confinement." (Ibis, pp. 30-31, 1897.)

TÆNIOPTERA PYROPE IGNEA Wetmore.

Tænioptera pyrope ignea Wetmore, Univ. Calif. Publ. in Zoöl. vol. 21, no. 12, p. 334, 1923 (Straits of Magellan).

Description.—Adult male, P. U. O. C. 7583, Chebunco, Patagonia, January 10, 1898, A. E. Colburn, collector. Total length, 8.10 inches; wing, 4.60; culmen, .65; tail, 3.70; tarsus, 1.10. Above deep ashy gray with a slight olive wash; wings blackish with narrow gray edgings to the secondaries; tail gray, becoming much lighter on the inner webs of the feathers and white on the outer web of the lateral feathers; lower parts grayish white, becoming ashy gray on the breast and flanks; bill and feet black.

Geographical Range.—Patagonia from Rio Negro to the Straits of Magellan.

Peters found it "common in clearings or semi-wooded pastures above Lake Nahuel Huapi where dead trees or branches furnish suitable perches." (Bull. M. C. Z. lxx. no. 9, p. 320.)

The birds of this kind collected by the Princeton naturalists indicate a species resident about the Straits of Magellan and breeding in November in the vicinity of Punta Arenas. The birds seem largely littoral in their distribution, though Mr. Hatcher and his assistants procured a single example at the headwaters of the Rio Chico de Santa Cruz.

December specimens from Punta Arenas are much worn while one from Chebunco, January, is half through the moult. The Rio Chico specimen is in juvenal plumage, much browner on the breast and with the upper tail coverts edged with ashy brown.

TÆNIOPTERA MURINA (Lafresnaye and d'Orbigny).

Pepoaza murina Lafresnaye and d'Orbigny, Syn. Av. p. 63 (1837) (Rio Negro, Patagonia).

Description.—Adult male, 237168 U. S. National Museum Colln., Mendoza, Argentina, September, 1908, Carlos S. Reed. Total length, 7.30 inches; wing, 3.85; culmen, .60; tail, 3.10; tarsus, 1.08. Above ashy brown (between drab and hair brown of Ridgway); wings blackish bordered with buffy white; tail black tipped with buffy white and entire outer web of outermost pair of feathers the same; below pale buffy or ashy, becoming nearly pure white on the abdomen, a dusky malar stripe on each side of the throat and black streaks below the ear coverts; lores pale buffy, the color extending over and under the eye; bill dark horn color, lower mandible lighter at base; feet black.

Geographical Range.—Southern Bolivia, Argentina and northern Patagonia (Rio Negro).

Mr. Peters secured one at San Antonio which was hopping about on the ground acting precisely like *Upucerthia dumetaria*.

It does not range into the country covered by the Princeton expeditions.

TÆNIOPTERA RUBETRA Burmeister.

Tenioptera rubetra Burmeister, J. f. O. 1860, p. 247 (Mendoza).

Description.—Adult male, 283827 Biol. Survey Colln., U. S. Department of Agriculture, Zapala, Neuquen, Argentina, December 7, 1920, Alexander Wetmore. Total length, 7.15 inches; wing, 4.70; culmen, .58; tail, 3.02; tarsus, 1.16. Above ochraceous tawny, feathers with dusky shaft streaks, crown deeper tawny; lores, superciliaries and under eyelid pure white, a dusky area before the eye and a tawny brown post-

ocular streak; ear coverts silvery white streaked with black; wings black, primaries with a large part of the outer web tawny, tertials and coverts brown with light ashy edgings, median coverts with black bases and shafts; tail black with outer web of outermost feathers white, and narrow grayish edgings to the others; under parts white, flanks and sides tawny ochraceous, narrow black streaks on the breast and two narrow molar stripes on each side of the throat, bill and feet black.

Sexes alike.

Geographical Range.—Argentina and northern Patagonia (Rio Negro).

Peters found it locally common in western Rio Negro (Huanuluan and Maquinchao). It does not extend into southern Patagonia and was not seen by the Princeton party.

Hudson "saw this pretty brown and white *Tenioptera* in summer and autumn; but it is not a common bird. They go in small scattered flocks, and frequent level plains abounding in low bushes. In notes, flight, and manner of feeding they resemble most of the other species of *Tenioptera*, but are not so wild or active as the last." (P. Z. S. 1872, p. 541.)

Genus PHÆOTRICCUS.

PHÆOTRICCUS HUDSONI (Sclater).

Cnipolegus hudsoni Sclater, P. Z. S. 1872, p. 541, pl. xxxi (Rio Negro, Patagonia).

Description.—Adult male, 284351, Biol. Survey Colln., U. S. Department of Agriculture, Victorica, Pampa, Argentina, December 27, 1920, Alexander Wetmore. Total length, 5.58 inches; wing, 2.75; culmen, .51; tail, 2.68; tarsus, .80. Entire exposed plumage jet black, with a slight bluish gloss with a concealed silky white patch on each side of the rump, the basal part of rump feathers grayish; there is also a white band across the inner webs of the remiges, bill plumbeous, feet black.

Geographical Range.—Patagonia (Rio Negro) and southern Argentina.

Hudson writes: "This bird makes his appearance late in September in the close thickets bordering on the Rio Negro; he is usually seen perched on the topmost twig of a bush watching for insects, after which he darts with great swiftness. He has one most remarkable habit: suddenly quitting his perch he glides two or three times close round it, uttering at the same time a peculiar sharp note. It also frequently utters a sharp, rapid

chirping, but has no song. It is a very lively little bird; and when, flying, it displays the white bars on its wings it has a strange and pretty appearance." (P. Z. S. 1872, pp. 541-542.)

Genus KNIPOLEGUS Boie.

Type.

Cnipolegus Boie, Isis, 1826, p. 973. *C. comatus*.

Geographical Range.—South America east of the Cordillera from the mouth of the Orinoco to northern and central Patagonia.

KNIPOLEGUS ATERRIMUS ATERRIMUS Kaup.

Cnipolegus aterrimus Kaup, J. F. O. 1853, p. 29 (Yungas, Bolivia).

Description.—Adult male, 284343, Biol. Survey Colln., U. S. Dept. of Agriculture, General Roca, Rio Negro, Argentina, November 29, 1920, Alexander Wetmore. Total length, 6.10 inches; wing, 3.90; culmen, .50; tail, 3.00; tarsus, .90. Exactly like *Phæotriccus hudsoni* except in measurements.

Young male, Biol. Survey Colln. 285188, Tapia, Tucuman, Argentina, Alexander Wetmore, April 11, 1921. Buffy brown above, becoming grayish on the head and chestnut on the rump; wings black with very broad and prominent edgings, those of the coverts forming two wing bands, tail mainly tawny chestnut with a terminal band about an inch in width, black; this does not however involve the outer web of the outermost feathers, under parts ochraceous buff, darkest on the breast, lores buffy, bill and feet blackish. The female is similar to the young male.

Geographical Range.—Bolivia to Argentina and northern Patagonia (General Roca, Rio Negro, Wetmore, the only record for Patagonia).

KNIPOLEGUS ANTHRACINUS Heine.

Cnipolegus anthracinus Heine, Jour. f. Ornith., 1859, p. 334 (Bolivia).

Similar to *K. aterrimus* but larger, with the white bar across the under side of the wing broader.

Geographical Range.—Argentina south to northern Rio Negro, Patagonia (Doering).

Genus LICHENOPS Sundevall.

Type.

Lichenops Sund. K. Vet.-Ak. Handl. 1835, p. 88 . . . *L. perspicillata*.*Geographical Range*.—South America, from eastern Bolivia and south-eastern Brazil to Patagonia as far south as 46° south latitude.

LICHENOPS PERSPICILLATA ANDINA Ridgway.

Lichenops perspicillatus andinus Ridgway, Proc. U. S. Nat. Mus. i. p. 483 (1879) (western South America, Chile to New Granada).*Description*.—Adult male, P. U. O. C. 8969, Province of La Plata, Argentina, May, 1897. Total length, 6.25 inches; wing, 3.60; culmen, .65; tail, 2.45; tarsus, 1.10. Uniform black above and below except the outer portion of the wing which is white, six outer primaries white, more or less black at tip and with a black spot at the base of some of them; this increases rapidly on the next three, leaving only a small white area at the tip extending inward along the shaft, next four feathers with a narrow white patch mainly on the outer web; bill yellow; feet black; a light-colored fleshy caruncle around the eye.

Adult female, P. U. O. C. 8970, Province of La Plata, Argentina, May, 1897. Entirely different, above streaked dark brown and buff, under parts buffy white with a few brown shaft streaks across the breast. Wing feathers largely chestnut tipped with dark brown, tertials and coverts dark brown edged with buff; tail dark brown; bill yellow; feet black; caruncle apparently absent.

Geographical Range.—Southeastern Bolivia, Rio Negro to Chile and Patagonia.

The Spectacle Warbler does not appear to enter that part of Patagonia explored by the Princeton Expeditions.

Mr. Peters found it to be a common summer resident in the Rio Negro region. It arrived at Huanuluan September 6 from farther north, occurring along the *arroyos* and in drier situations where there was a dense growth of *Moyi* bushes. It is a silent species with an occasional feeble, high-pitched *quee* (Bull. M. C. Z. lxx, No. 9, p. 321).

A. A. Lane states that it "is not uncommon in central Chile about reeds, lagunas and rivers. I did not observe it during the winter season in the province of Arauco; as I subsequently found it during the warm season about Valdivia in suitable localities.

"I did not hear of it in Chiloe or Puerto Montt, but observed it about the Rio Pilmaiguen during my stay at Rio Bueno.

"The oven-shaped nest, built of pieces of rush and mud, which I sent from Hospital, I believe belongs to this bird—at least so a native told me, but I had not been able to identify it to my own satisfaction. It was placed in reeds about a foot and a half above the water. . . .

"These birds appear to feed entirely on insects, which they capture frequently on the wing, making a clicking noise. I have also seen them alight on the ground in adjacent fields or grass-banks, to search for food. I never heard more than a slight call-note, and conclude that their vocal abilities are very insignificant." (Ibis, pp. 31-32, 1897.)

Genus MUSCISAXICOLA d'Orbigny & Lafresnaye.

Type.

Muscisaxicola d'Orb. et Lafr. Syn. Av. i. p. 65 (1837) . . . *M. rufivertex*.

Geographical Range.—South America, restricted to the higher altitudes of the Andes in Ecuador, Peru and Bolivia; in southern Chile and in Argentina, Patagonia, Tierra del Fuego and the Falkland Islands reaching down to sea level.

MUSCISAXICOLA HATCHERI Scott.

Muscisaxicola hatcheri Scott, Bull. Brit. Orn. Club, x. p. lv. (1900) (Rio Chico de Santa Cruz, Patagonia).

Description.—Adult male, P. U. O. C. 7645, Rio Chico de Santa Cruz (upper waters in the Cordillera), Patagonia, February 18, 1897, J. B. Hatcher. Total length, 6.60 inches; wing, 5.10; culmen, .70; tail, 2.75; tarsus, 1.32. Above uniform ashy ("drab" of Ridgway); wings dark brown edged on coverts and flight feathers with buff or dull white; tail and upper tail feathers black, outermost feather white on outer web, next two slightly edged with buffy; frontlet and superciliaries dull white, lores dusky, under parts dull white washed with ashy; bill and feet black.

Geographical Range.—Western Patagonia.

Only the single specimen above described was obtained by the expedition.

¹*Muscisaxicola brunnea* Gould, Voy. Beagle, Birds, p. 84 (1841), from Port St. Julien, Patagonia, is known only from Gould's description and is probably the young of some other species.

MUSCISAXICOLA MACLOVIANA MACLOVIANA (Garnot).

Sylvia macloviana Garnot, Voy. Coq. Zool. i. p. 540 (1826) (Falkland Islands).

Description.—Adult male, 70567, Mus. Comp. Zool., Port Stanley, East Falkland Isl., October 30, 1915. Total length, 6.70 inches; wing, 4.37; culmen, .50; tail, 2.82; tarsus, 1.15. Coloration almost exactly like *M. m. mentalis*, from which it differs in its larger size. The crown appears to be a little richer and darker in color and the gray of the back a little mottled and not quite so uniform.

Geographical Range.—Falkland Islands.

MUSCISAXICOLA MACLOVIANA MENTALIS d'Orbigny & Lafresnaye.

Muscisaxicola mentalis d'Orbigny and Lafresnaye, Syn. Av. p. 66 (1836) (Carmen de Patagones, Argentina, as fixed by Peters, Bull. M. C. Z. lxxv. p. 322).

Description.—Adult male, 7637, P. U. O. C., Punta Arenas, Chile, December 27, 1897, J. B. Hatcher. Above including wings ashy gray ("drab" of Ridgway) except the crown which is Mars brown, with lighter tips to the feathers, and the rump and upper tail coverts which are nearly black like the tail and flight feathers; sides of face dark ashy, lores black, chin tinged with dark chestnut; under parts white with an ashy tinge; bill and feet black. Total length, 6.25 inches; wing, 4.15; culmen, .48; tail, 2.60; tarsus, 1.10.

Geographical Range.—Tierra del Fuego north to Argentina and said to extend to Peru and Bolivia.

Mr. Hatcher and his associates found this bird to be abundant in the Punta Arenas region in December; the birds evidently were breeding at that time. Later, in February and March, at the head waters of the Rio Chico de Santa Cruz, another series of specimens was collected; the birds of the year were then fully moulted from the first nestling dress to the first fall plumage and young males at this age apparently lack the chestnut chin spot. Both adults and young of the year were secured here at this season and presumably the birds were common.

Mr. Peters obtained one at San Antonio, August 15, another at Huanuluan, September 10, and one at the western extension of Lake Nahuel Huapi in February. He considers that it breeds from the wooded slopes

of this last locality south to Tierra del Fuego and winters in eastern Patagonia (Bull. M. C. Z. lxx. No. 9, p. 322).

Hudson says: This little dark grey bird I first saw in the month of June, and I afterwards met with several small flocks of them. I am dis-



FIG. 391. *Muscisaxicola macloviana mentalis*, ♂ 7642. About three-quarters natural size.

posed to think, from my never having seen one till the depth of winter, that they migrate towards the north from the extreme southern portion of the continent in the cold season. In its habits, so far as I observed them, as well as in conformation, it closely resembles many other species of *Tenioptera*: it has a rapid, easy flight, goes in small flocks, is fond of alighting on smooth barren spots of earth, over which the individuals of the flock immediately scatter, running about like Plovers in all directions with great rapidity; it also occasionally assumes the habit of the true Fly-catcher, darting from its position on a dry stalk or spray to catch an insect on the wing. It is a shy bird, and has no song but the low plaintive note common to all the birds of its genus." (P. Z. S. 1872, p. 541.)

MUSCISAXICOLA RUFIVERTEX d'Orbigny and Lafresnaye.

Muscisaxicola rufivertex d'Orbigny and Lafresnaye, Syn. Av. p. 66 (1836)
(La Paz, Bolivia).

Description.—Adult male, 51290, Acad. Nat. Sci. Phila., Mendoza, Argentina, February, 1871. Above clear light cinereous, with a large pale chestnut spot covering the whole top of the head except the broad forehead, and narrower bands over the eyes; wing feathers, tail and upper tail coverts blackish brown, a white superciliary line and whole under parts white, tinged with cinereous; bill and feet black. Total length, 6.70 inches; wing, 4.02; culmen, .62; tail, 2.80; tarsus, 1.05.

Geographical Range.—Bolivia and Peru to Chile and Argentina, and western Patagonia (?).

MUSCISAXICOLA CAPISTRATA (Burmeister).

Ptyonura capistrata Burmeister, J. F. O. 1860, p. 248.

Muscisaxicola garretti Scott, Bull. Brit. Orn. Club, x. p. lxxv (1900) (Coy Inlet, Patagonia).

Description.—Adult male, P. U. O. C. 7643, near Coy Inlet, Patagonia, October 21, 1896, J. B. Hatcher (type of *M. garretti* Scott). Total length, 6.40 inches; wing, 4.35; culmen, .70; tail, 2.55; tarsus, 1.20. Above ashy ("drab" of Ridgway), more buffy on the lower back; rump, upper tail feathers and tail black, outer web of outermost buffy white with narrow edgings of the same on the next two; wings ashy brown; forehead broadly black, whole of crown chestnut; lower parts pale ashy becoming tawny on sides, flanks and under tail coverts; bill and feet black.

Geographical Range.—Western Bolivia, Chile, Argentina and Patagonia throughout.

The naturalists of the Princeton Expeditions secured this little known bird on the sea coast near Coy Inlet in southeast Patagonia; a series of four birds were collected at this point in October, 1896, and all of these are adults in full breeding plumage. Other records of the species will be found to extend its range over southern Argentina, Azul, Carhue and the Rio Colorado. It has been recorded from the Rio Negro and the Chubut Valley. Birds have also been collected in northeastern Tierra del Fuego.

MUSCISAXICOLA MACULIROSTRIS d'Orbigny and Lafresnaye.

Muscisaxicola maculirostris d'Orbigny and Lafresnaye, Syn. Av. p. 66 (1836) (La Paz, Bolivia).

Description.—4160, A. N. S. Phila. (no loc.). Total length, 6.08 inches; wing, 3.15; culmen, .51; tail, 2.60; tarsus, 1.00. Above, including the wings, grayish brown, brighter on the lower back; tail black, outer web of outermost feathers buffy white; superciliary and loreal spot buffy white; entire lower surface buffy white; feet black; bill black with base of lower mandible yellow.

Geographical Range.—Chile and Patagonia north to Peru and Bolivia. Not found by the Princeton Expedition in southern Patagonia.

Mr. Peters found this species to be "a fairly common resident in western Rio Negro, arriving at Huanuluan October 5." It had a most peculiar aerial performance. Rising from the ground or a perch the male takes a short flight, raising the wings at intervals over the back, dropping the tail and legs and uttering a loud *pe chēē*. (Bull. M. C. Z. lxx. no. 9, p. 323.)

Genus LESSONIA Swainson.

Type.

Lessonia Sw. Fauna B.-A., Aves, p. 490 (1831) *C. niger*.

Geographical Range.—South America; Andes of Peru, Bolivia and northern Chile; Argentina and Patagonia as well as southern Chile to sea level.

LESSONIA RUFA RUFA (Gmelin).

Alauda rufa Gmelin, Syst. Nat. i. p. 792.

Alauda nigra Boddaert, Tabl. Pl. Enl. p. 46 (1783).

Alauda fulva Latham, Ind. Orn. ii. p. 492 (1790).

Sylvia dorsalis King, Zool. Journ. iii. p. 428 (1827) (Port Famine, Patagonia).

Description.—Adult male, P. U. O. C. 7596, near Rio Coy, Patagonia, October 30, 1896, J. B. Hatcher. Total length, 5.00 inches; wing, 2.95; culmen, .40; tail, 1.90; tarsus, .85. Entire back bright chestnut, all the remainder of the plumage above and below black, thighs with a slight tinge of chestnut; bill and feet black.

Adult female, P. U. O. C. 7597, near Rio Coy Inlet, Patagonia, November 12, 1896, J. B. Hatcher. Length, 4.65; wing, 2.65; tail, 2.75. Back

cinnamon brown, head gray with dusky centers to the feathers, upper tail coverts, tail and wings black or blackish brown, outermost tail feathers white on the outer web; below cinereous brown on breast and sides somewhat mottled with paler tips to the feathers; throat, abdomen and crissum ashy white; bill and feet black.

Geographical Range.—Chile, Patagonia and Argentina, south to Tierra del Fuego.

Mr. Hatcher and his co-workers met this lark-like flycatcher wherever they reached the coast region of southern Chile or Patagonia, and a large series was collected. It seems always a species of river banks and the vicinity of the coast.

W. H. Hudson writes of it: "Very interesting in appearance is the silent little 'Osquita,' the bright rufous on its back contrasting prettily with its other color, the bill, feet, and plumage being intensely black, as if dyed in Indian ink; the inside of the bill and tongue is bright yellow. When they first appear the young males have almost as pale an ashy plumage as the females. Soon they become mottled with black, and before leaving us have only a few dark specks to distinguish them from the adults. They are quarrelsome and lively, incessantly hopping and flitting about the little spot of bare earth they attach themselves to." (P. Z. S. 1871, p. 259.)

E. W. White, who studied the species in Argentina, writes: "In Salto I saw two or three specimens, one male and the rest females, which I shot on the edge of a lagoon. In Flores a very wild specimen was secured in the banado or low swampy ground, but seemed disinclined to make for any shrubs, although some were near at hand.

"The nest is found close to the edge of the lagoon, about half a yard above the water, and is built pendent from two or three rushes united; covered at the top, with the exception of a small circular entrance $1\frac{1}{2}$ inch in diameter, placed at one side, and at times another small entrance near the bottom; it is constructed of roots of grass and rushes tightly cemented together, and beautifully lined with down. The external measurements of the nest are 4 inches in height and 3 in diameter.

"The egg, which is of a deep bluish-green and spotless, has a peculiar squat form, the upper part truly hemispherical, the lower spheroidal. Three eggs in a clutch." (P. Z. S. 1882, pp. 604-605.)

M. J. Nicoll found it "abundant at Punta Arenas, but during our short

stay there I saw only two adults. I met with it both along the shore and a short distance inland, where I found it perching on the barberry bushes. It was not easy to approach and was very restless in its movements." (Orn. Jour. Voy. round World, Ibis, Jan. 1904, pp. 42-43.)

Mr. Peters found it a very common summer resident in western Rio Negro, arriving at Huanuluan August 28.

Genus MYIOSYMPOTES Reichenbach.

Type.

Myiosympotes Reich. Av. Syst. Nat. t. lxxv. (1850) . . . *H. flaviventris*.

Geographical Range.—South America, south to central Patagonia and Chile.

MYIOSYMPOTES FLAVIVENTRIS (d'Orbigny and Lafresnaye).

Alecturus flaviventris d'Orbigny and Lafresnaye, Syn. Av. p. 55 (1836) (Corrientes, Argentina).

Arundinicola citreola Landbeck, Arch. für Naturg. 1863, p. 58, pl. i.

Description.—Male, 51230, Acad. Nat. Sci. Phila., Chile. Total length, 4.50 inches; wing, 1.90; culmen, .40; tail, 1.82; tarsus, .74. Above olive brown, tinged with chestnut on the crown, sides of face dusky, wings and tail dull brown edged with olive, entire under parts yellow, bill and feet blackish.

Geographical Range.—Paraguay, Uruguay, Argentina and Chile to Rio Negro and central Patagonia.

This species was not found by the Princeton Expedition.

Genus STIGMATURA Sclater and Salvin.

Type.

Stigmatura Scl. et Salv. P. Z. S. 1866, p. 188 *S. budytoides*.

Geographical Range.—South America; Upper Amazonia, Bolivia, Argentina and Patagonia.

STIGMATURA BUDYTOIDES FLAVOCINEREA (Burmeister).

Phylloscartes flavo-cinerea Burmeister, Rio La Plata, ii. p. 455 (1861) (Mendoza).

Description.—Adult male, 284435, Biol. Survey Colln., U. S. Dept. of Agriculture, Victorica, Pampa, Argentina, December 27, 1920, Alexander Wetmore. Total length, 5.50 inches; wing, 2.35; culmen, .32; tail, 2.92;

tarsus, .88. Above olive grayish; wings dull brown with obscure pale edgings; tail blackish with white tips to the two outer pairs of feathers, under parts very pale lemon yellow, washed with olive on the sides, superciliaries white, lores white with a black spot in front of the eye and a white spot on the lower lid, bill and feet plumbeous black.

Geographical Range.—Argentina and northern Patagonia (Rio Negro).

Genus SERPOPHAGA Gould.

Type.

Serpophaga Gould, Zool. Voy. Beagle, iii. p. 49 (1841) . *S. subcristata*.

Geographical Range.—Central and South America, from Costa Rica south to southern Patagonia.

SERPOPHAGA NIGRICANS (Vieillot).

Silvia nigricans Vieillot, Nov. Dict. d'Hist. Nat. xi. p. 204 (1817), based on "Tachuri obscurito" of Azara (Paraguay).

Description.—Adult male, 284991, Biol. Survey Colln., U. S. Dept. of Agriculture, Lazcano, Rocha, Uruguay, February 7, 1921. Total length, 4.50 inches; wing, 2.30; culmen, .40; tail, 2.14; tarsus, .75. Above gray with a wash of olive, wings and tail blackish brown, with light edgings to the tertials and coverts which wear off almost completely; lower parts light slaty gray, whiter on the throat and washed with olive buff on the sides and flanks, bill and feet black.

In unworn plumage (June 29), the edging to the tertials is buffy white, and the buff wash on flanks and under tail coverts is prominent. Birds in juvenal plumage have edgings to wing feathers brown and the buff wash below much darker.

Geographical Range.—Southern Brazil and Paraguay to northern Patagonia.

SERPOPHAGA PARVIROSTRIS (Gould).

Tyrannula parvirostris Gould, Voy. Beagle, Birds, p. 48 (1841) (Santa Cruz, Patagonia).

Description.—Adult male, 7654 P. U. O. C., Punta Arenas, Chile, January 3, 1898, A. E. Colburn. Total length, 4.90 inches; wing, 2.70; culmen, .30; tail, 2.26; tarsus, .70. Above buffy brown (Ridgway), darker and more cinereous on the head, becoming clear gray on the sides of the face and neck, ear coverts dusky; edgings to wing feathers tawny, most

prominent on coverts and secondaries; below pale grayish, whiter on throat and pale yellowish on abdomen, with a tinge of tawny on the thighs; feet black, bill nearly black above, paler on base of lower mandible.

A series of young from the same locality are more tawny above and much darker gray below, strongly suffused with tawny over the abdomen, sides and flanks, and in one specimen spreading onto the breast.

Geographical Range.—Bolivia to Chile and Patagonia.

Obtained by the Princeton Expedition at Punta Arenas in December and January. Four young in juvenal plumage secured in the latter month are deep chocolate brown above, two of them with tails only partly grown.

Genus ANAIRETES Reichenbach.

Type.

Anairetes Reichen. Av. S. N. t. lxvi. (1850) *A. parulus*.

Geographical Range.—South America, from Colombia southward through the Andes; in Argentina and southern Chile and Patagonia to sea level; represented in the Juan Fernandez group of islands.



FIG. 392. *Anairetes parulus parulus*, immature ♀ 7651. About two-thirds natural size.

ANAIRETES PARULUS PARULUS (Kittlitz).

Muscicapa parulus Kittlitz, Mem. Acad. Petersbg. i. p. 190, pl. 9 (1831)
(Concepcion).

Silvia bloxami Gray, Zool. Misc. 1831, p. 11.

Regulus plumbeus Peale, U. S. Expl. Exped. p. 94, pl. 25 (1848).

Description.—Adult male, P. U. O. C. 7648, Punta Arenas, Chile, December, 27, 1897, J. B. Hatcher. Total length, 3.90 inches; wing, 1.90; culmen, .28; tail, 1.80; tarsus, .75. Upper parts hair brown with an olivaceous tinge, head crested, darker, the long feathers almost black, frontal feathers varied with white, long white superciliaries; below pale lemon yellow, becoming white on the throat; throat and breast thickly



FIG. 393. *Anairetes parulus parulus*, ♂ 7646. About two-thirds natural size.

streaked with dull black; wings with narrow olive edgings to the primaries and obscure lighter tips to the greater coverts, tail with the outer web of the lateral feathers white; bill and feet black.

Geographical Range.—Chile to Straits of Magellan.

A. A. Lane, speaking of its occurrence in Chile, says: "It is much more numerous in the south, where it takes the place of the Tits of Europe. It is generally called the 'Torito,' from the crest on its head, which the Chilians think makes it resemble a bull. It is, I believe, a resident species; I saw it as far south as I went. It is also plentiful about Coronel and in the surrounding districts. It is of general occurrence, but most

abundant where cover is thick, and occurs largely in the forests, where it searches for minute insects just in the same manner as the Tits do in Europe.

"It is generally arboreal, though it often traverses the shrubs very low down, and will descend to the ground to examine roots, fallen timber, etc.

"Except when breeding, these birds keep in troops, and in this respect as well as their call-note they are extremely like the Tits, for which they might be mistaken by a person only knowing the former and not seeing them close.

"So far as I could see, they are strictly insectivorous.

"They utter a rather loud chattering note and make some other sounds, but none that could properly be called a song. When feeding in company they utter a call-note like that of the Coal-Tit." (Ibis, pp. 32-33, 1897.)

ANAIRETES PARULUS PATAGONICUS (Hellmayr).

Spizitornis parulus patagonicus Hellmayr, Archiv. naturg. 1920, 85, p. 51 (Neuquen, Argentina).

This race is described as differing from true *parulus* in having the belly white and two light wing bars instead of one, but the Princeton Expedition series is difficult to separate on these grounds and leaves one in doubt as to the true relationship of the forms.

Three from Punta Arenas are all strongly yellow below with a single wing band very faintly indicated. One from Coy Inlet is much whiter with a faint yellow tinge on the abdomen only and with two well-defined wing bars. Then there are two from "Chebunco, Patagonia," one of which matches the Punta Arenas series while the other is slightly whiter below and has two wing bars.

Geographical Range.—Neuquen, Argentina, south into Patagonia.

ANAIRETES PARULUS CURATUS Wetmore and Peters.

Spizitornis parulus curatus Wetmore and Peters, Auk, January, 1924, p. 145 (Rio Colorado, Gubernacion de Rio Negro, Argentina).

Description.—Adult male, 284998, Biol. Survey Colln., U. S. Dept. Agriculture, Funuyan, Mendoza, Argentina, March 24, 1921, Alexander Wetmore. Total length, 4.30 inches; wing, 1.88; culmen, .30; tail, 2.00; tarsus, .72. Similar to *A. p. parulus*, but somewhat paler above,

wings with two distinct bars formed by pale buff tips to the coverts, auricular region streaked with black and white and not solid blackish, yellow of lower surface practically confined to the abdomen, upper breast nearly white like the throat.

Geographical Range.—Rio Negro district, Argentina.

ANAIRETES FLAVIROSTRIS Sclater and Salvin.

Anæretes flavirostris Sclater and Salvin, P. Z. S. 1876, p. 355 (Tilotilo, Bolivia).

Description.—Adult, 4213, Acad. Nat. Sci. Phila., Bolivia. Total length, 4.25 inches; wing, 1.90; culmen, .30; tail, 1.88; tarsus, .70. Upper parts olive brown, tail and wings and slender elongated crest feathers blackish, edging of wing feathers and broad edgings of greater and lesser coverts whitish, as well as outer web of outermost tail feathers; beneath white becoming yellowish or buffy on abdomen, breast strongly streaked with black, feet black, bill yellow with dusky tip, superciliaries white and frontal feathers and those on the sides of the face mottled with white.

Geographical Range.—Southern Bolivia and central Argentina to coast of Patagonia (San Antonio—Peters).

Does not occur in the region covered by Mr. Hatcher's party.

Genus TACHURIS d'Orbigny and Lafresnaye.

Type.

Tachuris d'Orb. et Lafr. Syn. Av. i. p. 55 (1837) . . . *T. rubrigastra*.

Geographical Range.—Central and western Peru; Argentina, Chile and northern Patagonia. Confined to the reed-beds of lagoons and rivers.

TACHURIS RUBRIGASTRA RUBRIGASTRA (Vieillot).

Sylvia rubrigastra Vieillot, Nov. Dict. d'Hist. Nat. xi. p. 277 (1817), based on "Tachuri rey" of Azara (Paraguay).

Regulus azaræ Lichtenstein teste Nauman, Vög. Deutschl. iii. p. 966 (1823).

Regulus omnicolor Vieillot Gal. Ois. i. p. 271, pl. 166 (1825).

Regulus lyronensis J. E. Gray in Griffith's Anim. Kingd. ii. p. 42.

Description.—Adult male, 8755 P. U. O. C., La Plata, December, 1897 (S. Pozzi Collection). Total length, 4.50 inches; wing, 2.00; culmen, (other specimen, .32); tail, 1.80; tarsus, .82. Above dark bronze green,

becoming black on head, tinged with blue, which is strongly pronounced on the ear coverts; superciliaries greenish buff, vertical spot crimson, wings and tail blackish, inner web of wing feathers and outer web of tertials as well as some of the greater coverts white, outer tail feathers, outer web of next pair and tips of some of the others white; under parts ochraceous yellow, whiter on the throat, crissum crimson. A velvety black band extends from behind the shoulder across the breast but is interrupted in the middle by the long yellow feathers; bill and feet black.



FIG. 394. *Tachuris rubrigastra rubrigastra*, ♂ 7929. About two-thirds natural size.

Geographical Range.—Southern Brazil and western Peru to Paraguay, Argentina, Chile and Patagonia (Rio Negro).

The Princeton Expedition obtained two on the Rio Chico in March.

E. W. White says: "These pretty little birds frequent in considerable numbers the rushes on some lagoons near La Plata. They skip from reed to reed about a foot above the surface of the water, all the while uttering a peculiar creaking little note, much resembling that of the cricket. At Cosquin, however, I obtained only one specimen; and that was on the river." (P. Z. S. 1883, p. 39.)

A. A. Lane says: "This species is fairly numerous throughout central Chile, though confined to suitable localities. In the south it is scarcer, occurring more as a summer migrant, though it is resident near Coronel. At Valdivia it comes every summer to the reed-beds by the river, but

further south it is scarce. It occurs sparingly in Chiloe, according to the German observers, but on the mainland I did not see any near the Laguna de Llanquehui. I once saw one in some reeds by the Rio Pilmaiguén in February, but could not get a shot at it; it made no noise, and appeared to be a solitary wanderer. It is known as the 'Siete-colores' (seven colors) in all the districts which it frequents regularly.

"I only observed the birds in reeds, and I think they roost in them at night. The nest is placed on a single reed about 18 inches or 2 feet above the water. I believe three or four eggs are laid. In places where these birds are plentiful they make a good deal of chattering, the usual note being a metallic clicking or very sharp chirping; I should be inclined to compare it to tapping the point of a knife on a plate." (Ibis, p. 33, 1897.)

Genus ELÆNEA Sundevall.

Type.

Elænea Sund. K. Vet.-Ak. Handl. 1835, p. 89 (1836) . . . *E. pagana*.

Geographical Range.—America and adjacent islands from southern Mexico to the Straits of Magellan; Tierra del Fuego.

ELÆNEA ALBICEPS ALBICEPS (d'Orbigny and Lafresnaye).

Muscicapa albiceps d'Orbigny and Lafresnaye. Syn. Av. p. 47 (1836) (Yungas, Bolivia).

Description.—Adult male, 7539 P. U. O. C., Punta Arenas, Chili, December 24, 1897, J. B. Hatcher. Total length, 5.70 inches; wing, 3.12; culmen, .40; tail, 2.65; tarsus, .82. Above hair brown with an olive wash, vertical spot silky white; wings and tail dark brown, two conspicuous whitish wing bands formed by the tips of the coverts and tertials broadly and secondaries narrowly edged with the same; below pale cinereous, becoming white on the abdomen and under tail coverts slightly tinged with olive on the flanks; feet black, bill blackish brown, lower mandible paler at base. Young birds (December 23) with tails only partly grown are much browner above, with a buffy wash on the gray below and light marks on the wings tinged with buff.

Geographical Range.—Bolivia, Chili (to Strait of Magellan), Argentina and Patagonia.

A large series of this species was obtained at Punta Arenas in December and January. One young in juvenal plumage is paler and less green above. Another similar specimen was obtained at Rio Chico in February.

A. A. Lane writes of its habits in Chili as follows: "This little bird appears to have a wide range, but to be a migratory species. It is, I think, entirely arboreal, but is found in every part of Chili that I visited, frequenting forests, gardens, and bushes or shrubs of any sort. It is generally known as the 'Vio,' on account of its whistle or call-note, which is very characteristic. About Hospital it was called 'Chiflador,' which might either mean *whistler* or *cutler*, the former from its note, or the latter from its



FIG. 395. *Elanea albiceps*. ♂ 7529. About three quarters natural size.

destructive habits in gardens, where it picks off the buds of fruit-trees, though whether it does so in search of insects I cannot say. I observed a number in the gardens at Pica about the commencement of March, but later on I could not find one there. I did not see any whilst in Arauco during the cold season, but later on they appeared at Corral about the beginning of November (1890).

"At first, after making their appearance at Corral, the birds kept very quiet and well out of sight in the bushes, but soon they appeared to have got over the effects of their journey and made themselves heard all through the forest. They appear to range a good way south, and are found on

Chiloe during the summer season, migrating north in winter. On first seeing this bird I thought it was a finch, from the stoutness of the bill and its brisk manners. It usually has the head feathers erect, which makes the white fleck on the head very conspicuous. It captures insects on the wing in the same manner as the 'Diucon,' and makes the same snapping noise (at least when flying at insects). It does not, however, appear, like the former species, to rely on this method of feeding, but is continually searching about leafy branches for what it may find about the leaves. It also eats berries, especially those of the *marqui*, in the south when in season. It is not so much seen as heard, as it always flits through the leaves and flies out at insects, quickly retreating to its hiding-place. I saw one catch a good-sized butterfly. They sometimes go through more ludicrous antics even than the Diucon, swooping and twisting backwards, and occasionally fluttering through intricate branches as if shot and wounded.

"The nest is usually placed in a low thick bush or shrub, 2 to 4 feet from the ground. Only two eggs are laid.

"I never heard these birds make any noise when I got close on the nest. I found one nest in a *quila* bush. I did not find any nests with young, but observed young birds, which could only have flown a day or two previously, feeding on *marqui*, and, judging from some fresh droppings, on it exclusively.

"The song is a somewhat variable ditty, and is more amusing than harmonious, being a series of whistles and squeaking sounds uttered promiscuously, though with energy.

"This bird is held in very bad repute by gardeners on account of its depredations already alluded to." (Ibis, pp. 33-35, 1897.)

M. J. Nicoll says: "The immature specimen shot at Punta Arenas was met with in the barberry-bushes close to the shore. The adult had a conspicuous white crest. I procured it at Gray's Harbour, Smythe's Channel, in an almost impenetrable thicket. Its note somewhat resembled the pipe of a Bullfinch." (Ibis, Jan. 1904, p. 43.)

Mr. Peters found it an abundant resident about Lake Nahuel Huapi wherever woods or small groves occurred. The note is a mournful whistle, *fêô*. (Bull. M. C. Z. lxx. p. 325.)

Genus PYROCEPHALUS Gould.

Type.

Pyrocephalus Gould, Zool. Voy. Beagle, iii. p. 44 (1839).*P. parvirostris* Gld. + *Muscicapa coronata* Gmel. = *P. rubinus*.*Geographical Range*.—America, from the southwestern United States, Mexico, Central and South America to Argentina and the Galapagos Islands.

PYROCEPHALUS RUBINUS RUBINUS (Boddaert).

Muscicapa rubinus Boddaert, Tabl. de Pl. Eul. p. 42 (Brazil).*Muscicapa coronata* Gmelin, Syn. Nat. i. p. 932.*Pyrocephalus nanus* Sclater, P. Z. S. 1859, p. 46 (Ecuador).*Pyrocephalus parvirostris* Gould, Voy. Beagle, iii. p. 44, pl. vi.*Muscipita strigilata* Maximilian Beitr. iii. p. 900.*Description*.—Adult male, P. U. O. C., La Plata, February, 1898. Total length, 5.12 inches; wing, 3.10; culmen, .40; tail, 2.28; tarsus, .60. Above bister, outer webs of secondaries and outermost tail feathers very narrowly edged with whitish; entire crown and under parts scarlet red, a broad brown stripe through the eye to the hind neck, feet and bill black. Adult female lighter grayish brown on the head and back, feathers somewhat varied with darker centers or shaft lines; below white of breast and sides broadly streaked with cinereous, crissum pale orange.*Geographical Range*.—Colombia to Argentina and northern Patagonia (?).*W. H. Hudson* has published a full account of this bird in La Plata: "The Churinche (*Pyrocephalus rubineus*) is a common species in the neighbourhood of Buenos Aires. Its brilliant plumage and remarkable song make it one of the best known of our summer visitors. But the naturalist will find in the peculiarity of its migratory habits a far more interesting subject of contemplation. It is commonly called 'Churinche' from its note; also 'Federal,' from its predominating hue being the favourite colour of the political party (now happily extinct) of that name. The Churinche appears about the end of September, and is usually first seen in localities to which the Tyrantbirds and Tæniopteras are also partial, such as low grassy grounds, with here and there a stalk or bush, and near a wood or plantation. Insects are most abundant in such places; and here the Churinche is seen, perched on a twig, darting at intervals to snap at flies after the fashion of the Flycatchers, and frequently uttering his low, plaintive, and mellow note. This bird is very common in the woods along the

Plata; every orchard on the pampas is visited by a few of them; and they are very abundant about Buenos Aires city. Going south they become rarer; but, strange to say, a few individuals find their way to the shores of the Rio Negro, though before reaching it they must cross to a high barren country quite unsuited to them. The natives of the Carmen have no name for the Churinche, but speak of it as a bird wonderful for its beauty and seldom seen. Amongst the dull-plumaged Patagonian species it certainly has a very brilliant appearance."

Family PHYTOTOMIDÆ.

Sclater, Cat. Bds. Brit. Mus. xiv. p. 406 (1888); Sharpe, Hand-List Bds. iii. p. 178 (1901).

Genus PHYTOTOMA Molina.

Type.

Phytotoma Molina, Saggio s. St. Nat. Chili, p. 345 (1782) . *P. rara*.

Geographical Range.—South America, from western Peru south through Bolivia and Argentina to Northern and Central Patagonia, and Chili.

PHYTOTOMA RUTILA RUTILA Vieillot.

Phytotoma rutila Vieillot, Nov. Dict. d'Hist. Nat. xxvi. p. 64 (1818), based on "Habia dentudo" of Azara (Paraguay).

Description.—Adult male, 284574 Biol. Survey Colln., U. S. Dept. of Agriculture, Victorica, Pampa, Argentina, December 29, 1920, Alexander Wetmore. Total length, 6.90 inches; wing, 3.50; culmen, .48; tail, 3.40; tarsus, .90. Above dark bluish gray, mottled with black on the back; wings blackish with large conspicuous white spots on the coverts forming two bands, narrow white tips to the secondaries; tail black with white tips to all but the middle pair of feathers; crown and entire under surface bright orange tawny, sides of the face gray like the back, thighs gray, feet and bill dusky.

Female entirely different, general aspect streaked black and white. Upper parts blackish brown with gray streaks on the back becoming whitish on the head and neck, rump largely gray; below buffy white with distinct black streaks, wings and tail dull blackish brown with slight white tips to wing coverts and all but the middle pair of tail feathers.

Geographical Range.—Paraguay, Uruguay and Argentina (Rio Negro). Apparently does not occur south of the lower Rio Negro Valley.

Hudson says of this bird—the *Chingolo grande* of the residents of Argentina: "Seen amidst the dull-plumaged tribes that people the grey thickets of Patagonia, the rufous throat and bosom of the male give it almost a gay appearance. In its habits it very closely resembles the *Tanagra striata*. Like that bird it builds a round and shallow nest in a close bush, and lays four eggs. It goes singly or in small flocks, sits on the top of a bush, and hides when approached, feeds on fruit and seeds; the flight is a series of sudden, short undulations, the wings producing a loud humming sound. The notes of the male are remarkable, and resemble, when the bird sings or utters its alarm on the nest being approached, the feeble bleating of a kid or lamb. This peculiar intonation is also possessed by the *Tanagra striata* in its song. This bird is quite common in the thickets bordering on the river." (P. Z. S. 1872, p. 537.)

Neither of the *Phytotomas* reach the region explored by the Princeton expedition.

PHYTOTOMA RARA Molina.

Phytotoma rara Molina, Saggio Stor. Nat. Chili, p. 345 (1782) (Chili).

Description.—Adult male, A. N. S. Phila. 51534, Chili, E. Reed. Total length, 7.00 inches; wing, 3.55; culmen, .50; tail, 2.98; tarsus, 1.00. Above slaty gray with broad black centers to the feathers; crown mahogany red, sides of face black with whitish superciliaries beginning above the eye and a white spot below the ear coverts; wings black with two prominent white wing bars, and narrow white edgings about the middle of some of the primaries; tail blackish with a broad band of mahogany red across the inner webs of all but the central pair, tips dull gray, entire under parts pale chestnut or orange rufous, darkest on the breast; feet and bill blackish.

Female olive gray above with broad black centers to all the feathers, including the crown; wings with dull buff edgings beneath, buff with narrow black median streaks to the feathers, except on the throat and middle of the abdomen; tail as in the male.

Geographical Range.—Chili and across the Andes to Bariloche at Lake Nahuel Huapi (Peters).

B. PASSERES NORMALES.

Sharpe, Cat. Bds. Brit. Mus. iii. p. 3 (1877); Sharpe, Hand-List Bds. iii. p. 187 (1901).

Family HIRUNDINIDÆ.

Sharpe, Cat. Bds. Brit. Mus. x. p. 85 (1885); Sharpe, Hand-List Bds. iii. p. 187 (1901).

Sub-Family HIRUNDININÆ.

Sharpe, Cat. Bds. Brit. Mus. x. p. 85 (1885); Sharpe, Hand-List Bds. iii. p. 187 (1901).

Genus IRIDOPROCNE Coues.

Type.

Iridoprocne Coues, B. Color. Vall. p. 412 (1878). . *Hirundo bicolor* Vieillot.

Geographical Range.—North, Middle and South America; adjacent islands.

IRIDOPROCNE LEUCORRHOA (Vieillot).

Hirundo leucorrhoa Vieillot, n. Dict. d'Hist. Nat. xiv. p. 519 (1817), based on "Golondrina rabadilla blanca" of Azara (Paraguay).

Hirundo frontalis Gould, Voy. Beagle, Birds, p. 40 (1841) (Monte Video, north bank of the Plata).

Hirundo gouldi Cassin, Proc. Acad. Nat. Sci. Phila. 1850, p. 69 (La Plata).

Description.—Adult male, P. U. O. C. 8974, La Plata. Total length, 5.50 inches; wing, 4.62; culmen, .30; tail, 2.12; tarsus, .50. Above glossy steel green, with a white supraloral streak, broader in front, and a broad white rump patch; wings and tail brownish black with slight steel green reflections, some secondaries with remains of white tips; whole under surface white with a steel green patch on each side of the breast; bill and feet black.

Female similar.

Geographical Range.—Brazil and central Peru through Uruguay, Paraguay, Argentina and Patagonia as far as Chupat Valley.

Hudson says of this species in La Plata: "The *Hirundo leucorrhoa* is the most common of our Swallows, and in its glossy coat of deep blue and green, with rump and under plumage snowy white, is an elegant and beautiful bird. They are the last of all the migratory species to leave us in autumn, and invariably reappear in small numbers on every warm day in winter, so that some people do not believe that they leave us at all, but only retire to the more sheltered places when the weather is severe. In the win-

ter of 1869 I saw three of them skimming over the plain on one of the coldest days I have ever experienced, the thermometer having stood at 29° Fahr. the preceding evening. But those that remain through the winter with us are apparently only a few individuals, while in the autumn myriads are seen passing north in their migration, and some years continue passing for upwards of a month. In April 1869, several days after all the Swallows of our five species had totally disappeared, flights of the kind I am describing began again to appear passing north; and for ten days afterwards they continued to pass. They would descend to sip water from a pool where I watched them, alighting afterwards on the reeds and bushes to rest. Many of them appeared quite tired with their journey, rising reluctantly when approached, and some allowing me to stand within two yards of them without flying. I had never before observed any supplementary or later migration like this; and last autumn (1870) certainly nothing of the kind took place. Probably the migration of this species extends very far south; at present (September 22) they are passing in great numbers, and have been so passing for the last fifteen days.

"They sometimes build in a tree, in the large nest, previously abandoned, of the Senatero (*Anumbius acuticaudatus*). . . .

"It is, however, under the eaves of houses that these Swallows principally breed; and there is not a house on the pampas, however humble it may be, but some of these birds are about it, sportively skimming over and about the roof or curiously peering under the eaves and incessantly uttering their gurgling, happy notes. Indeed their fondness for being close to a house is so remarkably strong that in their longest excursions they are seldom more than five minutes absent from it.

"For a month or six weeks before they begin to build, they seem to be holding an incessant dispute; and however many eligible chinks and holes there may be, the contention is always just as great among them, and is doubtless referable to opposing claims to the best places. When these troubles and feuds are finally ended, they address themselves diligently to their work, and build a rather large nest. They are not neat or skilful workers, but merely stuff a great quantity of straw and other light material into the hole they build in, and line it thickly with feathers and horsehair. The eggs are white and pointed, from five to seven in number. . . .

"They have a habit which cannot but be grateful to the mind of every

lover of nature who is an early riser. An hour before sunrise and ere any wild bird has broken the profound silence of night, multitudes of these Swallows, as at the signal of a leader, begin their song, at the same time mounting upwards into the still dusky sky. Their notes at this time are different from the hurried twitterings they utter through the day; they are impressive, and, though soft, may be heard at a long distance; sounding far and near, up in the sky, from so many throats, they have a most charming effect that seems in peculiar harmony with the shadowy morning twilight."

IRIDOPROCNE MEYENI (Cabanis).

Hirundo leucopyga Meyen, Nova Acta Acad. Leop. Carol. and Suppl. p. 73 (1834) (Chile).

Petrochelidon meyeri Cabanis, Mus. Hein, i. p. 48 (1850) (Chili).

Description.—Adult male, P. U. O. C. 7523, Punta Arenas, Chili, December 13, 1897, J. B. Hatcher. Total length, 5.22 inches; wing, 4.40; culmen, .28; tail, 2.20; tarsus, .41. Above glossy purplish blue, with a broad rump band pure white, wings and tail blackish with a slight bluish gloss; a very narrow white supraloral line, area below the eyes velvety black extending over on the sides of the throat; under parts white with a wash of gray on the sides of the breast; bill and feet black.

Female similar but duller and with the black under the eyes not extending onto the sides of the throat or only to a very slight extent.

Geographical Range.—Bolivia, Chili, Argentina and Patagonia to Straits of Magellan.

Many specimens were obtained at Punta Arenas, December 13 to January 6, where it was breeding.

M. J. Nicholl writes: "I saw some of these Martins flying round the houses at Punta Arenas. The tarsi and toes are not feathered as in our House-Martin, otherwise they might easily be mistaken for that species. The cry is very similar." (Ibis, 1904, p. 42.)

A. A. Lane says: "Common throughout Chile, and known as the 'Golondrina.' I believe it is found in Valdivia and Chiloe only in the warm season. I observed it in June at Coronel, but on going to Maquegua I found none at that date, though it became plentiful there at the end of August." (Ibis, p. 15, 1897.)

W. H. Hudson considers it migratory in the lower Rio Negro Valley and Mr. Peters found it arriving at Huanuluan September 29 and dis-

appearing again by the middle of October. He found it apparently breeding at Paso Flores and Rio Limay in December.

Genus PROGNE Boie.

Type.

Progne, Boie, Isis, 1826, p. 971. *H. purpurea* = *H. subis*.

Geographical Range.—North, Middle and South America; the Antilles; the Galapagos.

PROGNE FURCATA Baird.

Progne furcata Baird, N. Am. Birds, p. 278 (1864).

Description.—Adult male, P. U. O. C. 8985, La Plata, Argentina, January, 1898. Total length, 7.75 inches; wing, 5.40; culmen, .42; tail, 3.20; tarsus, .62. Uniform glossy purple above and below, wings and tail dull black with slight glossy reflections, bill and feet black.

Female similar above but duller, below dark gray with paler edgings to the feathers, middle of the abdomen whitish.

Geographical Range.—Chili and Paraguay through Argentina to Patagonia (Chupat Valley).

The Fork-tailed Martin does not invade, so far as known, the southern portion of Patagonia, but is a characteristic form found as a migrant in the Chupat Valley south to about 45° South Latitude. Here the birds arrive in the spring and breed in December, retiring to the north again in the early autumn.

Mr. Peters found it rather locally distributed in western Rio Negro and it was apparently nesting in rocky walls of a valley running from Puesto Horno to Talagapa, December 21 (Bull. M. C. Z. lxx, No. 9, p. 327).

Genus PYGOCHELIDON Baird.

Type.

Pygochelidon Baird, t. c. p. 308 (1865) *A. cyanoleuca*.

Geographical Range.—Central America from Guatemala southward throughout South America as far south as Central Patagonia (Chupat Valley).

PYGOCHELIDON PATAGONICA PATAGONICA d'Orbigny and Lafresnaye.

Hirundo patagonica d'Orbigny and Lafresnaye, Syn. Av. Mag. de Zool. 1837, p. 69 (Patagonia).

Description.—Adult female, 283961 Biol. Survey Colln. U. S. Dept. Agriculture, General Roca, Rio Negro, Argentina, November 27, 1920, Alexander Wetmore. Total length, 5.10 inches; wing, 4.08; culmen, .23; tail, 2.10; tarsus, .56. Above glossy metallic blue, wings and tail dull brownish black, below white; largest under tail coverts blackish with metallic blue tips.

Sexes alike.

Geographical Range.—Argentina to central Patagonia (Chupat Valley).

Mr. Peters found them at Huanuluan when they arrived October 9 and frequented "sandy flats along the line of cart-paths, where old ruts and horse-tracks formed miniature banks where they make their burrows." (Bull. M. C. Z. lxv. No. 9, p. 327.)

This species, the *Golondrinas timoneles negros* of Azara, is the smallest of the Patagonian swallows. W. H. Hudson says: "In Buenos Ayres these swallows appear early in September. They are bank-birds, breeding in forsaken holes and burrows (for they never bore into the earth themselves), and are consequently not much seen about the habitations of man. They sometimes find their breeding holes in the banks of streams, or in peopled districts in the sides of ditches, and down in wells. But if in such sites alone fit receptacles for their eggs were found, the species, instead of one of the commonest, would be rare indeed; for on the level pampas most of the watercourses have marshy borders, or at the most but low and gently sloping banks. But the burrowing habits of two other animals, the Vizcacha (*Lagostomus trichodactylus*) and the bird (*Geositta cunicularia*) have everywhere afforded the Swallows abundance of breeding-places on the plains, even where there are no streams or any other irregularities in the smooth surface of the earth.

"The *Geositta* bores its hole in the sides of the Vizcacha's burrows; and in this burrow within a burrow the Swallow lays its eggs and rears its young, and is the guest of the Vizcacha and as much dependent on him as the Wren or the Swallow we call domestic is on man; so that in spring when this species returns it is in the villages of the Vizcacha we see them. There they live and spend the day, sporting about the burrows, just as the domestic Swallow does about our houses. The nest, constructed of dry grass lined with feathers, is placed at the extreme end of the burrow, and contains five or six white, pointed eggs. After the young have flown, they sit close together on a weed, thistle-top, or low tree, and the parents con-

tinue to feed them many days. . . . When flying, these Swallows glide along very close to the earth, and when weary settle down (contrary to the custom of other swallows) and rest on the level grassy plains. Like other birds of this family they possess the habit of gliding to and fro before a rider's horse to snatch up the little twilight moths startled from the grass. Seldom does a person ride on the pampas in summer without having a number of Swallows gather round him; often I have thought that more than a hundred were before my horse at one time; but, from the rapidity of their motions, it is impossible to count them.

"When the season of migration approaches, they begin to congregate in parties not very large (though sometimes as many as one or two hundred individuals are seen together); these companies spend much of their time perched close together on weeds, low trees, fences, or other slightly elevated situations, and pay very little attention to a person approaching, but seem preoccupied or preyed upon by some anxiety that has no visible cause.

"This time immediately preceding the departure of the Swallows is indeed a season of deep interest to the observer of nature. The birds seem to forget their songs and aerial recreations; the attachment of the sexes, the remembrance of the spring is obliterated; they already begin to feel the premonitions of that marvellous instinct that urges them hence: not yet an irresistible impulse, it is a vague sense of disquiet; but its influence is manifest in their language and gestures, their wild manner of flight, and listless intervals. The little *Atticora cyanoleuca* disappears immediately after the other, larger species. Many stragglers continue to be seen after the departure of the main body; but before the middle of March not one remains, the migration of this species being very regular." (P. Z. S. 1872, pp. 844-846.)

Family TROGLODYTIDÆ.

Sharpe, Cat. Birds, Brit. Mus. vi. p. 180 (1881); Hand List Birds, iv. p. 71 (1903).

Genus TROGLODYTES Vieillot.

Troglodytes Vieillot, Ois. Amer. Sept., 1807 (1809?), 52.

Type.

Troglodytes ædon.

TROGLODYTES MUSCULUS MAGELLANICUS Gould.

Troglodytes magellanicus Gould, P. Z. S. 1836, p. 85.

Troglodytes hornensis Auct. nec Lesson.

Description.—Adult male, P. U. O. C. 7720, Rio Coy, February 10, 1896. Total length, 4.30 inches; wing, 2.10; culmen, .48; tail, 1.82; tarsus, .80. Above cinnamon brown, grayer on head and neck and becoming tawny on rump and tail, the latter narrowly barred with black, wings like back tertials and outer edge of remiges barred with black, below pale vinaceous, more tawny on the flanks; under tail coverts bright tawny; feet pale, bill horn color.

Geographical Range.—Eastern Argentina, southern Chili and Patagonia.

Found at numerous localities in southern Patagonia—Punta Arenas, Rio Coy, Coy Inlet, Rio Chico, and Cape Fairweather. There are two specimens in juvenal plumage from Punta Arenas taken in December. October specimens from Rio Coy are in full fresh plumage.

Mr. Peters found it a common migrant and local summer resident in northwestern Patagonia (Bull. M. C. Z. lxx, No. 9, p. 328).

Genus CISTOTHORUS Cabanis.

Type.

Cistothorus Cabanis, Mus. Hein., I, 1851, 77 (note).

Troglodytes stellaris.

CISTOTHORUS PLATENSIS HORNENSIS (Lesson).

Troglodytes hornensis Lesson, Inst. 1834, p. 316 ("Sud-est Cap Horn").

Troglodytes eidouxi (Bonap.) Consp. Avium, i. p. 221, 1850 (Talcahuano, Chile).

Description.—Adult male, P. U. O. C. 7937, Rio Chico, Patagonia, March 16, 1898. Total length, 4.35 inches; wing, 1.90; culmen, .43; tail, 1.68; tarsus, .72. Tawny ochraceous above, feathers broadly black on either side, those of the back with a terminal white streak; wing coverts and tertials tawny ochraceous spotted and banded with black, remiges dull brown with pale edgings; tail tawny ochraceous broadly banded with black; under parts whitish strongly tinged with ochraceous on the sides of breast and body and on the flanks, broad whitish superciliaries, ear coverts ochraceous streaked with black. Feet pale, bill horn color above, lower mandible paler.

Geographical Range.—Chili, southern Patagonia (Chuput Valley south) and the Falkland Islands.

Mr. Peters secured some immature birds, presumably of this form, at Bariloche.

The Princeton expedition obtained a number of specimens on the Rio Chico, March 15–18, and one near Mt. Tigre, August 24. They exhibit no great variation,

Family MIMIDÆ.

Sharpe, Cat. Birds Brit. Mus. vi, p. 322 (1881); Hand List Birds, iv. p. 102 (1903).

Genus MIMUS Boie.

Mimus Boie, Isis, xix, 1826, 972. *Turdus polyglottos*.
Type.

MIMUS PATAGONICUS PATAGONICUS (Lafresnaye and d'Orbigny).

Orpheus patagonicus Lafresnay and d'Orbigny, Mag. de Zool. 1835, p. 19 (Santa Cruz, Patagonia).

Description.—Adult male, P. U. O. C. 7926, March 11, 1898, Rio Chico, Patagonia, A. E. Colburn. Total length, 9.12 inches; wing, 4.20; culmen, .61; tail, 3.64; tarsus, 1.45. Above ashy brown (hair brown of Ridgway) with a tawny suffusion on the rump, crown with dusky centers to the feathers; wings black, greater and lesser coverts and tertials edged with brownish buff and tipped with white, flight feathers narrowly margined with white; tail black, all but the middle pair broadly tipped with white, outermost pair with narrow white edging on outer web; under parts light drab with pale edgings to the feathers of the breast, throat white with a narrow black line on each side, flanks grayish cinnamon, ear coverts tinged with cinnamon and minutely speckled with black, a whitish band over the eye and a black streak through it, eyelids white.

A young bird in juvenal plumage, Santa Cruz, Patagonia, February 25, 1898 is browner above and dull white below with dull brownish spots over the breast and flanks.

Geographical Range.—Argentina and Patagonia south to Rio Chico.

Found by the Princeton Expedition at Santa Cruz and Rio Chico in February and March. A speckled young was secured at the former locality on February 25. In northern Patagonia Mr. Peters found them abun-

dant at San Antonio on the coast in August and rather uncommon residents at Huanuluan and Maquinchao.

Hudson, writing of the Patagonian mockingbird, says: "It is a very common bird, lives in pairs, and feeds on insects and berries. In its nidification it is like the *M. calandria*, the nest being composed of thorns and sticks, and lined with soft dry grass and cow-hair, and placed in the centre of a thorny bush; the eggs oval, four in number, and very thickly covered with flesh-coloured spots. When a person approaches the nest, the parent birds manifest their anxiety by perching and hopping on the twigs within a yard or two of his head, but without uttering any sound; the *M. calandria*, when alarmed, utters incessantly a loud harsh angry cry. Neither of these species will live in confinement.

"The vocal performance of the Patagonian bird is characterized by the same apparently infinite variety as is that of the Buenos-Ayorean bird. . . . The singing of the Patagonian species is perhaps inferior, his voice being less powerful than that of the other species; his mellow or clear notes are often mingled with shrill ones resembling the songs or cries of various tenuirostral birds. While incapable of notes so loud or harsh as those of the Buenos-Ayres bird, or of changes so wild and sudden, he possesses even a greater variety of sweet notes: day after day, for months, I heard them singing, and I never once listened to them for any length of time without hearing some note or notes that I had never heard before. I have often observed that when a bird, while singing, emits a few of these *new* notes, he seems surprised and delighted with them; for after a silent pause he repeats them again and again a vast number of times, as if to impress them on his memory. When he once more resumes his varied singing, for hours, and sometimes for days, the expression he has discovered is still a favourite, and recurs with the greatest frequency. Many individuals seem to possess a peculiar style of singing; and they seem more or less able to borrow or imitate each other's notes: sometimes all the birds frequenting a thicket will be heard constantly repeating, for many days, a few particular notes as if they possessed no other song, while in other localities these notes will not be heard at all. The bird sits on the summit of a bush when singing; and its music is heard in all seasons, and in all weathers, from dawn till after dark; but he usually sings in a leisurely, unexcited manner, remaining silent a long interval after every five or six or dozen notes, and apparently listening to his brother performers. These snatches of melody

often seem like a prelude or promise of something better coming; there is in them such exquisite sweetness, such variety, that the hearer is ever expecting a fuller measure; and still the bird opens its bill to delight and disappoint him, as if not yet ready to begin." (P. Z. S. 1872, pp. 538-539.)

MIMUS TRIURUS (Vieillot).

Turdus triurus Vieillot, N. Dict. d'Hist. Nat. xx, p. 275 (1818), based on "Tres Colas" of Azara (Paraguay).

Orpheus tricaudatus d'Orbigny and Lafresnaye, Syn. Av. Mag. de Zool. 1835, p. 18 (Chiquitos, Bolivia).

Description.—Adult male, 283915 Biol. Survey Colln. U. S. Dept. of Agriculture, Puerto Periasco, Paraguay, September 7, 1920, Alexander Wetmore. Total length, 8.55 inches; wing, 4.12; culmen, .68; tail, 4.18; tarsus, 1.35. Head and back hair brown with a wash of gray, lower back and rump dull chestnut, broad white superciliaries, wings black with a broad white band from the bend of the closed wing to the tip of the secondaries, involving most of the secondaries and greater wing coverts, below white with a pale ashy wash and a touch of buff on the flanks; tail with two central pairs of feathers black, the two outermost pairs pure white, and the others white with black on the outer web. Bill and feet black. Sexes alike.

Geographical Range.—Bolivia, western Brazil and Paraguay to northern Patagonia (Rio Negro).

This Mockingbird does not reach the country covered by the Princeton naturalists.

Hudson says of this species: "It is by no means numerous in Patagonia; certainly nothing was known of its song; but the pleasure I felt on making the discovery of its vocal powers it would be idle for me to attempt to portray. I noticed in the woods of *chunar*, along the Rio Negro, a few individuals of this species in the month of February; they did not sing then, but sometimes uttered a harsh note like that of the *Mimus calandria*. Had it not been for this note I should have thought the bird to be (seeing it only at a distance) a species of *Taenioptera*, from its black and white plumage, wild disposition, its rapid, high, and graceful flight. It disappeared in March without my having obtained specimens or heard it sing; for the native residents in Patagonia, many of whom were well acquainted with the bird, had told me that it was a very fine

singer. In October, a few days before leaving the Rio Negro, I was one morning walking through the thick woods of *chunar*, when my attention was suddenly arrested by the song of a bird issuing from a bush close by, a song to which I listened with astonishment and delight, so totally different, so vastly superior to the songs of all other birds, whether native or foreign, to which I had ever listened. Notes surpassing in melody, power, and variety those of both the Patagonian and Buenos-Ayorean *Mimi* were rapidly poured forth in an unbroken stream, till I marvelled that the throat of any bird could sustain so powerful a song for so long a time. . . .

"I soon advanced near enough to catch sight of the singer, and found it to be the 'Calandria blanca.' I found the pleasure of listening to him enhanced if he was at the same time seen: so carried away with rapture at his own melody seems the bird, so many and so beautiful are the gestures and motions with which he accompanies the performance. He would incessantly pass from bush to bush, sometimes soar above the thicket for a hundred yards, with a flight as slow as that of a Heron, and at times rise with a swift, wild flight, then slowly circle down and sit on the summit of a bush, with the broad wings and tail spread out, an object beautiful to see. What a pity it is that this bird should frequent only a desert country, where so very few can hear it. . . . This bird disappears from the vicinity of the Carmen at the end of summer; but it probably does not go very far, as it by no means belongs to a migratory family: probably it passes the winter on those great plains covered with forest west of Bahia Blanca." (P. Z. S. 1872, pp. 539-541.)

Family TURDIDÆ.

Sharpe, Cat. Birds, Brit. Mus. v. pp. 1, 146-406 (1881); Hand List Birds, p. 111 (1903).

Genus TURDUS Linnæus.

Turdus Linnæus, Syst. Nat., ed. 10, I, 168 (1758). Type *Turdus merula* Linnæus.

TURDUS MAGELLANICUS MAGELLANICUS King.

Turdus magellanicus King, P. Z. S. 1830, p. 14 (Straits of Magellan).

Description.—Adult male, P. U. O. C. 7744, Punta Arenas, Chili, December 12, 1897, J. B. Hatcher. Total length, 9.80 inches; wing, 5.25;

culmen, .76; tail, 4.18; tarsus, 1.45. Above olive brown, grayer on the rump, entire top and sides of head black, wings and tail black, the wing coverts and secondaries edged with olive brown; throat white streaked with black, breast, abdomen and sides buffy clay color, brightest on the middle of the abdomen and flanks, grayer on the breast; under tail coverts white; feet horn color; bill yellow. Sexes similar.



FIG. 396. *Turdus magellanicus*, immature ♀, 7740. About one half natural size.

Full-grown young (Dec. 17, 1897, Punta Arenas) are richer brown above, with tawny shaft streaks and black tips to the interscapular feathers and scapulars; whole under side spotted with large round black spots.

Geographical Range.—Humid regions about Lake Nahuel Huapi south through the Andes to the Straits of Magellan and Tierra del Fuego, also islands of Chiloe and Juan Fernandes.

Found plentifully at Punta Arenas December 12 to January 1; full-grown, speckle-breasted young were obtained there December 17 to 25. At Rio Chico in February both adults and juvenal birds were just completing the moult.



FIG. 397. *Turdus magellanicus*, adult ♂, 7744. About one half natural size.

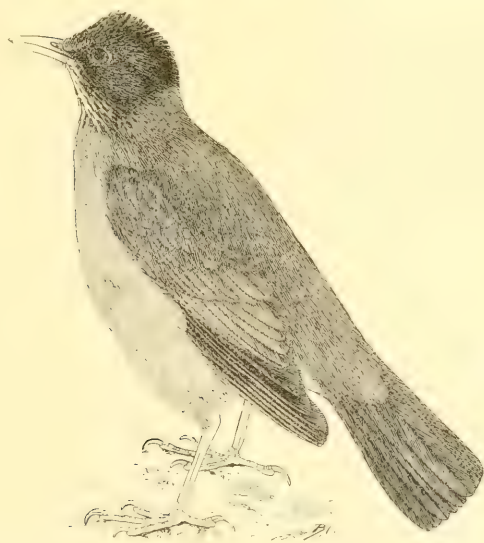


FIG. 398. *Turdus magellanicus*, im. ♂, 7741. About one half natural size.

M. J. Nicholl says: "This handsome Thrush was not common when we were in the Straits. I met with only three individuals, and saw none until we got to the extreme west of the Straits. It utters a low plaintive whistle.

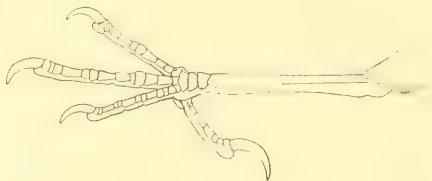


FIG. 399. *Turdus magellanicus*, 7743. Details of foot, one half natural size.

The young bird in first plumage is not unlike our Blackbird (*Turdus merula*) at that stage, but has a dark, almost black, crown." (Ibis, Jan. 1904, p. 45.)

TURDUS MAGELLANICUS PEMBERTONI Wetmore.

Turdus magellanicus pembertoni Wetmore, Univ. of Calif. Publ. in Zool., Vol. 21, No. 12, p. 335 (Cerro Anecon Grande, Rio Negro, Argentina).

Description.—Adult male, 284003 Biol. Survey Colln. U. S. Dept. Agriculture, General Roca, Rio Negro, Argentina, Alexander Wetmore. Total length, 9.05 inches; wing, 5.05; culmen, .85; tail, 3.88; tarsus, 1.58. This is a paler form of *T. m. magellanicus*. In worn specimens the difference in coloration of the upper surface is not pronounced but the present form is much paler below, the abdomen being pale pinkish buff, the breast washed with dull gray. Sexes alike.

Dr. Wetmore states that birds in juvenal plumage present the same pale type of coloration as compared with true *magellanicus* of the same stage.

Geographical Range.—Rio Negro except the western mountainous areas and perhaps northward into Mendoza (Wetmore).

TURDUS FALCKLANDII Quoy and Gaimard.

Turdus falcklandii Quoy and Gaimard, Voy. de l'Uranie, Zool., p. 104, 1824 ("Malouines").

Description.—Adult, 16198 A. N. S. Phila., Falkland Islands. Total length, 10.00 inches; wing, 5.50; culmen, .78; tail, 4.12; tarsus, 1.75. Above brown (Prout's brown of Ridgway), top and sides of head blackish,

an obscure brownish line behind the eye; wings and tail dull brown; below ochraceous tawny, darkest on the breast and under tail coverts; throat white tinged with buff, streaked with blackish; bill dark above, horn color below, feet horn color.

Geographical Range.—Falkland Islands.

Family MOTACILLIDÆ.

Sharpe, Cat. Bds. Brit. Mus. x. p. 456 (1885): Hand List of Birds, v. p. 137 (1909).

Genus ANTHUS Bechstein.

Anthus Bechstein, Gemein. Naturg. Deutschl., III, p. 704 (1807). Type
Anthus aquaticus Bechstein = *Alda spinoletta* Linnæus.

ANTHUS CORRENDERA CORRENDERA Vieillot.

Anthus correndera Vieillot, Nov. Dict. d'Hist. Nat. xxvi. p. 491 (1818), based on "*Alondra correndera*" of Azara (Paraguay).

Description.—Adult male, P. U. O. C. 7633, near Rio Coy, Patagonia, October 1, 1896. Total length, 6.00 inches; wing, 3.12; culmen, .48; tail, 2.40; tarsus, .90. Above, broadly streaked with sandy buff (shaded with olive on the wings) and black, edges of the interscapulars much lighter, forming two light longitudinal bands, and edges of the tertials similar; wings and tail dull brown with narrow, paler edgings to the feathers, tail with outer pair of feathers largely white, next pair with a white line next the shaft on the inside; below, white with a buff wash across the breast and with heavy black triangular spots on breast and sides. Claw on hind toe long and nearly straight, about equal to the toe, or longer. Worn specimens become paler and grayer with the spots below smaller. A very much worn individual (May) has the back and crown largely dull black, the hind neck largely buff in distinct contrast and the longitudinal bands white.

Geographical Range.—Southern Brazil and Paraguay south through Argentina and Patagonia to the Falkland Islands.

Obtained by the Princeton party at Rio Coy in October (full fresh plumage); Mt. Tigre, August; and Cape Fairweather, February (badly worn breeding bird).

E. W. White writes of this species in Argentina: "This bird is abundant at this season of the year [August] in low-lying swampy pastures, where the grass is high. Upon being disturbed they start up high into the air, very much like an English lark, singing all the while very prettily, and remain poised on the wing. On the approach of a foot-passenger they crouch close to the ground, allowing the foot almost to tread upon them; and as they are of its exact colour, they are difficult to see. This habit leads the observant country urchins to compass the destruction of these poor birds, which they do by breaking off a piece of fencing wire, about a yard and a half long, turning it up at the ends, seizing it by one extremity, whirling it round their heads, all the while approaching the feathered songsters, and then suddenly launching the chain shot, which rarely misses its errand." (P. Z. S. p. 594, 1882.)

Mr. Peters found this species "a very common summer resident in western Rio Negro. . . . They inhabited the sandy valleys, especially those watered by the *arroyos*. From the day of their arrival they were singing constantly . . . —*ten-cents apie'ce, chrurr, ten-cents apie'ce, chrurr*. It is always a flight song, the bird ascending possibly fifty yards into the air, the words being uttered while flying, and the *chrurr* while descending on set wings. Then there is a recovery and a repetition." They breed in November. (Bull. M. C. Z. lxxv. No. 9, p. 329.)

In Uruguay O. V. Alpin says: "This is one of the commonest birds, and, from its habit of frequenting the barest and most open parts of the campo, is known to some English residents as the 'Camp-bird.' They prefer the high-lying parts of the camp and breed in the open. The nest is usually in some slight depression—a hoof-mark for instance—and is not infrequently discovered by your horse nearly putting his foot on it. In this way a nest formed of soft grass and lined with fine grass was found in a hoof-mark on November 13th. It contained four fresh eggs; the eggs are white, with a faint bluish shade, sparingly speckled all over with grey and pale brown, mostly so near the large end in some cases. In one egg at the large end are two or three hair-like marks, nearly black. Another nest, on the 17th, with one egg, was placed against the stems of a low plant of *mio-mio*—that poisonous deep green plant which always flourishes in times of drought, when everything else is withering up. This nest had an addition to the lining in the shape of a little coarse cow-hair. This bird, like all the others of this family with which I am acquainted, has

peculiar singing-habits. In October it was in full song; mounting in the air in true Pipit fashion, it descended to the ground in a slanting direction, and either settled or mounted again when within a foot or so of it; in descent it sang a rapid trilling strain—‘*che, che, che, weeeee!*’—the latter part of the song a long-drawn strained note. When on the ground or on a fence, it would sometimes sing a shrill short song, falling in tone—‘*schiiiii-cheeeee!*’ But in mid-November these songs were heard much less frequently, and as I rode over the camp I used to hear a song, the whereabouts of which I could not make out at first: ‘*awecee-titiweetee*’ over and over again. At last I traced it to a little bird hovering and flying about in an irregular way high up in the dazzling sky. The wings were flapping quickly and then motionless for a few seconds. The song came down from several birds at once, a little distance apart, very sweetly; but it was blinding work to watch the birds for long. By February 1st they were in full moult. On the 10th April I noted that they had been very noisy lately, flying about singly and in little flocks—the call-note then being ‘*tchick.*’ The next day I heard one sing, the weather being very pleasant, like a second spring in fact. I am inclined to think they became less numerous towards the end of autumn.” (Ibis, pp. 163–164, 1894.)

ANTHUS CORRENDERA CHILENSIS (Less.).

Corydalla chilensis Lesson, Discr. Mamm. et Ois. p. 298 (1838).

Description.—Adult, 147335 U. S. Nat. Museum Colln. Chili, 1872, Reed. Total length, 5.80 inches; wing, 2.90; culmen, .46; tail, 2.25; tarsus, .90. This form differs but slightly from the preceding, being more richly colored throughout; the upper parts are suffused with a rich brownish yellow tint and the breast is deeper yellowish buff. An extremely worn specimen from Santiago is duller than any *A. c. correndera* I have seen, with under parts white except for a slight buff tint on the breast and upper parts dull brown with buffy white edgings. In this condition the two races must be indistinguishable and I am not sure but that comparable series at other times will show that there is no tangible difference between them. Sexes alike.

Geographical Range.—Southern Bolivia and Chili.

Not seen by the Princeton Expedition.

ANTHUS FURCATUS FURCATUS d'Orbigny and Lafresnay.

Anthus furcatus d'Orbigny and Lafresnay, Syn. Av. Mag. de Zool. 1836, p. 27 (Patagonia).

Description.—Adult male, 8788 P. U. O. C., La Plata, Argentina, June 1896. Total length, 6.00 inches; wing, 3.00; culmen, .40; tail, 2.30; tarsus, .88. Above sandy brown with a cinnamon tinge on head, neck, back and rump feathers which are centered with dull blackish brown, while those of the interscapulum have whitish edges; wings and tail dull blackish brown, with pale edgings, outermost rectrices largely white with a dusky streak on the outer web near the tip, next pair with a white line just inside the shaft; below, white with a strong ochraceous buff tinge across the breast, the feathers of breast and sides with dull blackish spots. Hind claw somewhat curved, equal to or shorter than the toe. A much duller bird than *A. correndera* with shorter hind claw, smaller bill and with a cinnamon tint above in contrast to the yellow-ochraceous tone of the latter.

Geographical Range.—Bolivia and Peru through Argentina to northern Patagonia (Huanuluan and El Escorial—Peters).

Not seen by the Princeton Expedition.

Family FRINGILLIDÆ.

Sharpe, Cat. Bds. Brit. Mus. xii. p. 1 (1888); Hand List Birds, v. p. 188 (1909).

Genus SPINUS Koch.

Spinus Koch, Syst. Baier. Zool., p. 233 (1816). Type *Fringilla spinus* Linnæus.

SPINUS BARBATUS (Molina).

Fringilla barbata Molina, Sagg. St. Nat. Chil. p. 249 (1782) (Chili).

?*Chrysomitris magellanicus* Darwin, Voy. Beagle, Birds, p. 97 (1841) (Maldonado.; Rio Negro).

Description.—Adult male, 7672 P. U. O. C., Punta Arenas, Chili, December 23, 1897, J. B. Hatcher. Total length, 5.00 inches; wing, 2.90; culmen, .35; tail, 2.00; tarsus, .70. Whole crown black, rest of upper parts olive green with dusky centers to the feathers, rump clear greenish yellow, below greenish yellow with a black throat patch reaching onto the upper breast, lower abdomen and under tail coverts white, the latter streaked with black; crissum bright yellow; wings black with a bright yellow band

formed by ends of greater coverts and a duller band on the median coverts, a bright yellow speculum on the primaries; tips of tertials whitish, bill light horn, feet dark.

Female, 7685 P. U. O. C., Punta Arenas, December 28, 1897, dull greenish above, with no black cap; below, pale greenish yellow, becoming white on the abdomen and under tail coverts, yellow superciliaries joining yellow of lower parts on the sides of the neck.

Young birds in juvenal plumage (December 28) similar to female but browner above and whole under parts yellow shaded with olive.

Geographical Range.—Chili, Patagonia and the Falkland Islands.

The Princeton Expedition found this goldfinch abundant at Punta Arenas, December 17–29. Several specimens in juvenal plumage are darker above than the adult females, and darker lemon yellow below, olivaceous on breast and sides.

E. W. White says: "This finch was secured in the thickest part of the woods in the Sierras of Totoral, but is so scarce there that only one specimen could be obtained; in Santo Tome, however, it occurred in large flocks amongst the woods near the river Uruguay, where, when startled, they fly up sharply and settle on the branches, uttering a very pretty chorus." (P. Z. S. p. 600, 1882.)

In the vicinity of Bariloche Mr. Peters found them fairly common on the wooded hills, in restless bands, during January and February, but they were not breeding. (Bull. M. C. Z. lxx. No. 9, p. 330.)

In Chili A. A. Lane says: "This species is one of the most popular and familiar small birds. It is very numerous in the southern provinces, and from its beauty, docility, and singing capabilities is kept by many people as a cage bird. It is known everywhere as the 'Jilguero,' pronounced 'Silguero' in the southern provinces.

"These birds closely resemble the common Siskin in general appearance and colouring, as also in habits. I did not observe them in the central provinces, but was told they occur as winter visitants. I found them very numerous in Arauco, and also about Valdivia; but south of the latter district I did not observe so many, though a certain number occurred as far south as I went, and on Chiloe. They breed at Rio Bueno about November, somewhat earlier than other small species there.

"I was not fortunate in getting any eggs of this bird, but found a new nest, which was placed in a thick shrub on the margin of the forest about 3 feet above the ground.

"In winter-time in Arauco I frequently saw them feeding on the top-most twigs of low forest trees, just like a flock of Siskins do here on the alder. They commence to sing at Maquegua (Arauco) about the beginning of August, and sing a good deal through the summer. Their song is very pleasing and much esteemed. Their call-note is the double whistle of the Siskin. They prefer wooded districts, and are not found in very open localities, and appear capable of finding subsistence in the forest for a large proportion of the year, if not altogether." (Ibis, pp. 21-22, 1897.)

SPINUS ICTERICUS ICTERICUS (Lichtenstein).

Fringilla magellanica Vieillot, Nov. Dict. d'Hist. Nat. xii. p. 168 (1817).

Fringilla ictérica Lichtenstein, Verz. Doubl. p. 26, 1823.

Description.—Adult male, 10282 A. N. S. Phila., "South America." Total length, 4.20 inches; wing, 2.55; culmen, .38; tail, 1.60; tarsus, .50. Head all around and upper breast black; back yellowish olive with only a slight indication of darker centers to the feathers; under parts and rump bright golden yellow as well as the edging to greater coverts and the speculum on the primaries; upper tail coverts yellow olive, wing feathers black except as noted, tail black with broad basal area bright yellow, bill light, feet black.

Female without the black hood, paler and greener above and pale yellow below, shaded with olive and becoming white on the middle of the abdomen.

Geographical Range.—Southern Brazil and Paraguay through Argentina to Patagonia (Rio Negro and Chupat). Does not range to the southern region explored by the Princeton party.

Genus SICALIS Boie.

Type.

Sicalis Boie, Isis, 1828, p. 324. *Fringilla flaveola* Linnæus

SICALIS ARVENSIS ARVENSIS (Kittlitz).

Fringilla arvensis Kittlitz, Mem. Acad. Petersb. ii. p. 134, tab. 4 (1835) (Chile).

Description.—Adult male, Argentina, February 1895, Princeton University collection. Total length, 5.00 inches; wing, 2.75; culmen, .35; tail, 2.00; tarsus, .68. Above brown tinged with olive, becoming plain

yellowish olive on the rump and gray on the upper tail coverts, top of head, neck, and back strongly streaked with black, wings and tail brownish black with brown and buff edgings, bend of the wing and under wing coverts yellow, under parts canary yellow, becoming whitish on the throat and under tail coverts, sides of breast and body gray tinged with olive.

Geographical Range.—Bolivia, Peru and Brazil, south through Argentina to Patagonia (Chupat, Santa Cruz, Huanuluan and Bariloche).

SICALIS LEBRUNI (Oustalet).

Pseudochloris lebruni Oustalet, Miss. Sc. Cap. Horn, Ois. p. 98, 1891 (Patagonia).

Description.—Adult male, 7995 P. U. O. C., Santa Cruz, Patagonia, February 25, 1898, A. E. Colburn. Total length, 5.30 inches; wing, 3.20; culmen, .40; tail, 2.15; tarsus, .70. Above general appearance gray with yellow-olive (old gold) patches showing through, each feather is yellow-olive at base with a broad gray margin and by abrasion the bird in the breeding season becomes largely gray above; wings and tail blackish, edged with pale gray, coverts and base of tail with yellow olive, the lesser wing coverts entirely of this color; below bright yellow, more or less shaded with gray tips, which wear off by the breeding season; bill and feet horn color.

The female is ashy brown above and below except the middle of the abdomen which is more or less yellow and the under tail coverts which are buffy white; the shoulders and bend of the wing are yellow olive.

Geographical Range.—Patagonia, from Huanuluan and Maquinchao to Missioneros.

Besides the specimen described above Mr. Colburn obtained another at Rio Gallegos, May 28, 1896. Mr. Peters found it "a fairly common resident at Maquinchao and Huanuluan, where it is pretty much confined to the rocky cliffs. The call note is a characteristic *pink*; the song a succession of the same note, in quality midway between a chatter and a trill." (Bull. M. C. Z. lxxv. No. 9, p. 332.)

SICALIS AUREIVENTRIS Phillipi and Landbeck.

Sicalis aureiventris Phillipi and Landbeck, Archiv naturg. 1864, p. 49 (Chili).

Geographical Range.—Southern Bolivia to Chili and northwestern Patagonia.

This rare species does not range into the country covered by the Princeton Expedition.

It was found by Mr. J. L. Peters in the vicinity of Huanuluan, Rio Negro, during October and November.

Genus BRACHYSPIZA Ridgway.

Type.

Brachyspiza Ridgway, Auk, 1898, p. 224. . *Fringilla capensis* Müller.

BRACHYSPIZA CAPENSIS CANICAPILLA (Gould).

Zonotrichia canicapilla Gould, Voy. Beagle, Birds, p. 91 (1841) (Port Desire).

Description.—Adult male, 7501 P. U. O. C., Mt. Tigre, August 24, 1896. Total length, 5.65 inches; wing, 3.15; culmen, .40; tail, 2.55; tarsus, .80. Top and sides of head clear gray, darker on the cheeks and

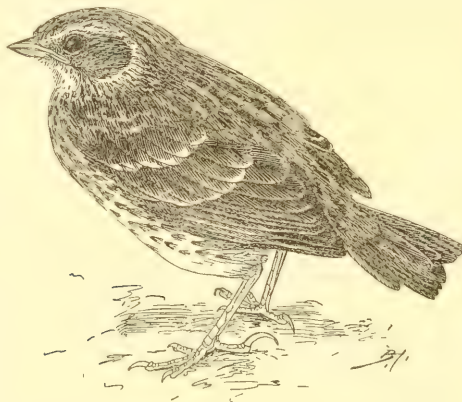


FIG. 400. *Brachyspiza capensis canicapilla*, immature ♀, 7512. About three quarters natural size.

ear coverts and some flecks of white below the eye, back ashy brown, each feather with a broad black median stripe; rump uniform ashy brown, a chestnut collar around the head, neck, wings and tail dark brown with lighter edgings and two white wingbars made by the tips of the coverts; under parts ashy white, pure white on throat and middle of abdomen, a black area in the middle of the breast, with chestnut on either side joining the chestnut collar; bill and feet dark horn color.

Fully fledged young (Punta Arenas, December 26, 1897) are streaked above tawny brown and black, edges of secondaries reddish brown; below buffy white, heavily spotted with dull black, except center of throat and abdomen and under tail coverts.

Geographical Range.—Patagonia; Rio Negro to Straits of Magellan.

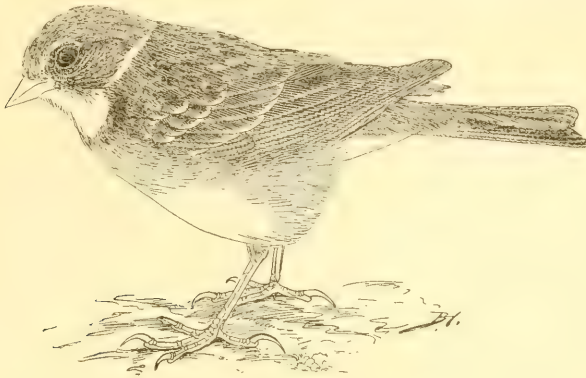


FIG. 401. *Brachyspiza capensis canicapilla*, ♂, 7501. About three quarters natural size.

M. J. Nichol says: "This Finch is very common at Punta Arenas, where I found it amongst the barberry-bushes. The adult obtained on Jan. 30th was in full moult." (*Ibis*, Jan. 1904, p. 42.)

Mr. Peters found it an abundant resident in northern Patagonia from San Antonio on the coast to Huanuluan. Nesting began late in November, eggs 2 to 3 in a bulky nest lined with feathers and placed in a small bush. (*Bull. M. C. Z.* lxx. No. 9, p. 334.)

It was found abundantly by the Princeton Expedition at Punta Arenas, December 12–26, when a series of both adults and juvenal birds was secured. Near the headwaters of the Chico fresh plumaged specimens were obtained in March, while those from Cape Fairweather and Mt. Tigre, July and August respectively, are somewhat bleached.

BRACHYSPIZA CAPENSIS CHORAULES Wetmore and Peters.

Brachyspiza capensis choraules Wetmore and Peters, *Proc. Biol. Soc. Wash.* Vol. 35, 1922, p. 44 (Gobernación de Rio Negro, Argentina).

Description.—Adult male, 284136 *Biol. Survey Colln.*, U. S. Dept. of Agriculture, General Roca, Rio Negro, Argentina, November 23, 1920,

Alexander Wetmore. Total length, 5.45 inches; wing, 3.10; culmen, .46; tail, 2.42; tarsus, .82. Similar to the preceding but with the cap rather darker gray and bordered on each side by a dusky stripe, below which is a whitish superciliary, the wing edgings are also paler.

From the Chilian *B. c. chilensis* it differs in being paler with the superciliary stripe whiter, sides and flanks lighter and more buffy (Wetmore and Peters).

Geographical Range.—Lake Nahuel Huapi, Patagonia, north to Mendoza, Argentina (Peters).

Genus EMBERNAGRA Lesson.

Type.

Embernagra Lesson, *Traité*, p. 465 (1831) . *Emberiza platensis* Gmelin.

EMBERNAGRA PLATENSIS (Gmelin).

Emberiza platensis Gmelin, *Syst. Nat.* i. p. 886 (1788), based on the "Plata Bunting" of Latham, *Gen. Syn.* ii. Pt. 1, p. 210 (1783) (Buenos Aires).

Emberizoides poliocephalus Gray in Darwin's *Voy. Beagle*, *Birds*, p. 98 (1841) (Monte Video: Maldonado).

Description.—Adult male, La Plata, Argentina, August 1899, Princeton University collection. Total length, 8.30 inches; wing, 3.58; culmen, .62; tail, 3.55; tarsus, 1.20. Above gray with a tinge of olive becoming stronger on the back, which is streaked with black, indistinct lighter gray superciliaries, lores and fore part of cheeks blackish; tail, wing coverts and edgings of remiges bright yellowish olive, under parts grayish white with a tinge of buff, stronger posteriorly, becoming darker gray on breast and throat and blackish at base of bill, feet light horn color, lower mandible the same, upper mandible largely black.

Geographical Range.—Southern Brazil, Uruguay and Argentina to northern Patagonia (Rio Negro).

Not found in the region covered by the Princeton Expedition.

Genus PHRYGILUS Cabanis.

Type.

Phrygilus Cabanis, *Archiv. f. Naturg.* x. p.

289 (1844) *Fringilla gayi* Eyd. and Gerv.

PHRYGILUS GAYI (Eydoux and Gervais).

Fringilla gayi Eyd. and Gervais, Mag. de Zool. 1834, pl. 23 (Chili).

Fringilla formosa Gould, Voy. Beagle, Birds, p. 93, 1841 (Tierra del Fuego).

Chlorospiza aldunatei Des Murs, Gay's Hist. Chile, Zool. 1847, i. p. 356 (Chili).

Description.—Adult male, 7549 P. U. O. C., Punta Arenas, Chili, December 24, 1897. Total length, 5.65 inches; wing, 3.25; culmen, .50; tail, 2.30; tarsus, .88. Head and neck all around bluish slate forming a hood; back rich orange brown (antique brown of Ridgway), passing to bright greenish orange (aniline yellow of Ridgway) on rump, and to olive green on hind neck; wings and tail externally bluish slate, concealed portions of feathers blackish, remiges edged with light gray; under parts except throat wax yellow; thighs gray; under tail coverts gray and white.

Female similar but duller, back olive green, under parts duller yellow, hood paler gray.

Geographical Range.—Chili and Patagonia (Lake Nahuel Huapi to Tierra del Fuego).

Mr. Peters found it "a fairly common denizen of the brushy pastures and open woods about Lake Nahuel Huapi, but does not extend into the arid region to the eastward." (Bull. M. C. Z. lxx. No. 9, p. 334.)

Found abundantly by the Princeton naturalists at Punta Arenas, December 12 to January 4, both adults and young; the latter are duller than the female, more olive on the breast, throat yellowish with dark malar stripes well developed and flanks darker.

A. A. Lane, describing its occurrence in Chili, says: "I did not observe these Finches until I went to the province of Arauco, north of which they do not occur on the lowlands; at least so I was told. They are more plentiful in the south, especially in Chiloe, and on the adjacent mainland. Their local name is 'Chanchito' ('little pig')."

"The favorite haunts of these birds are the sides of ravines or abrupt hollows, covered with thick bush of a seed-bearing nature, and small cliffs covered with creepers. They do not occur on open stretches, but are often numerous in partially cleared localities, where coppice has taken the place of the large timber previously cut down or burnt. I never could find their nests. I frequently saw them in confinement, in aviaries. When

crossing the Andes, from Santiago to Mendoza, I found this bird numerous on the Argentine side, where it feeds on the ground on the barren mountain-slopes." (Ibis, pp. 16-17, 1897.)

PHRYGILUS PATAGONICUS LOWE.

Phrygilus gayi patagonicus Lowe, Ibis, 1923, p. 515.

P. aldunatei Auct. nec Des Murs.

Description.—Adult male, 7563 P. U. O. C., Cape Fairweather, July 24, 1896. Total length, 6.20 inches; wing, 3.80; culmen, .48; tail, 2.80; tarsus, .85. Head and throat all around bluish slate, forming a hood, lores blackish; above bright yellow-olive, below olive yellow, lower

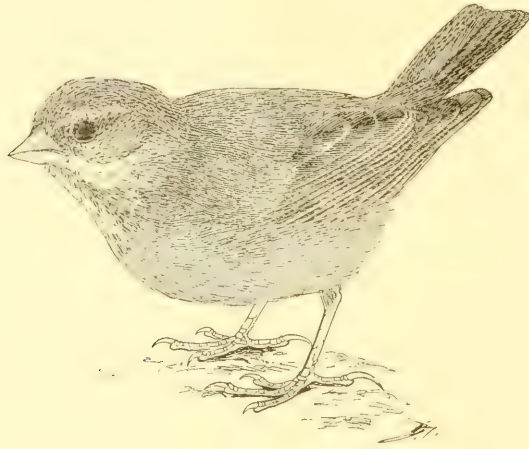


FIG. 402. *Phrygilus patagonicus*, ♂, 7992. About three quarters natural size.

abdomen, flanks and under tail coverts pale gray or grayish white; upper tail coverts bluish slate; wings and tail externally bluish slate, concealed portions of feathers blackish.

Female much duller; hood pale gray with dark shaft spots or streaks, and a dusky malar streak, body above dull olive, below brownish orange on breast fading to isabelline on flanks and white on middle of abdomen and under tail coverts.

Differs from *P. gayi* in much larger size, different color of back and abdomen and the very different coloration of the female. It is clearly

not a race of this species, although belonging to the same section of the genus.

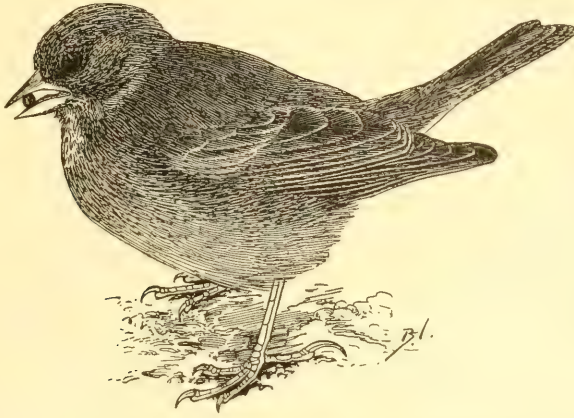


FIG. 403. *Phrygilus patagonicus*, ♀, 7565. About three quarters natural size.

Geographical Range.—Chili, Western Argentina and Patagonia (Santa Cruz and Gregory Bay).

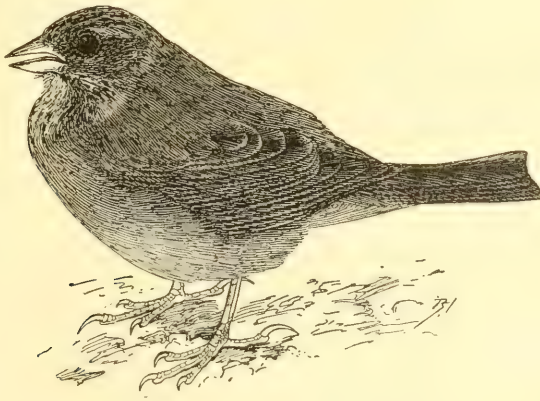


FIG. 404. *Phrygilus patagonicus*, ♂, 7568. About three quarters natural size.

Mr. Peters found this bird a not uncommon migrant and probably summer resident in the arid western portion of the Rio Negro.



FIG. 405. *Phrygilus patagonicus*, ♀, 7565. About three quarters natural size.

The Princeton Expedition obtained it at Punta Arenas, December 12; Cape Fairweather, July 24; Coy Inlet, November 12; Santa Cruz, February 25.

PHRYGILUS MELANODERUS MELANODERUS (Quoy and Gaimard).

Emberiza melanoderus Quoy and Gaimard, Voy. Uranie, Zool. p. 109 (1824) (Falkland Islands).

Melanodera typica Gould, P. Z. S. 1859, p. 95 (Falkland Islands).

Description.—Adult male, 10692 A. N. S. Phila., South America. Total length, 6.20 inches; wing, 3.85; culmen, .40; tail, 2.58; tarsus, .88. Above, cap gray, back dull olive green with more or less gray tips and bases to the feathers; wings dull blackish with yellow olive edgings, the two outermost pairs of tail feathers almost entirely light yellow, brighter on the outer web, the next pair dusky with a yellow area on the middle of the inner web, others dusky with yellow-olive edgings; superciliaries, area below the eye, and malar stripes white, lores black, ear coverts gray; throat black; rest of lower parts yellow, flanks grayish.

A winter specimen is similar but suffused with gray and brownish.

Geographical Range.—Patagonia (Santa Cruz) and Falkland Islands. Not seen by the members of the Princeton Expedition.

PHRYGILUS MELANODERUS PRINCETONIANUS Scott.

Phrygilus princetonianus Scott, Bull. Brit. Orn. Club, x. p. lxiv. 1900 (Cheike, Patagonia).

Description.—Adult male, 7698 P. U. O. C., Cheike, Patagonia, January 16, 1898, A. E. Colburn. Total length, 5.75 inches; wing, 3.62; culmen, .40; tail, 2.40; tarsus, .90. Similar to *P. melanoderus* but back largely gray and wings with much more canary yellow on the primaries and coverts; the primaries are white on the basal half of the inner web tinged with yellow, and bright yellow on the outer web from base almost to tip; the coverts are largely canary yellow, making the closed wing appear almost entirely of this color, except the tips of the primary coverts and alula which are black and the olive green and gray edgings to the secondaries.

Female (7697 P. U. O. C., Cheike, Patagonia, January 16, 1898) quite different, upper parts streaked black and gray, rump largely olive and wings washed with olive, but otherwise like those of the male; below, throat white finely streaked with dusky, breast and sides of neck strongly streaked black and white, breast washed with yellow, abdomen white, flanks with dusky streaks; tail as in the male.

Geographical Range.—Patagonia (Cheike, Santa Cruz).

A number of specimens of this subspecies were secured at Cheike, January 15 to 18, representing both sexes, but the members of the expedition failed to find it at any other locality.

PHRYGILUS XANTHOGRAMMUS (Gray).

Chlorospiza xanthogramma Gray in Darwin's Voy. Beagle, Birds, p. 196, pl. xxxiii, 1841 (East Falkland Islands, Tierra del Fuego).

Description.—Adult male, 82934 Mus. Comp. Zool. Punta Arenas, Chili, November 18, 1914, R. H. Beck. Total length, 6.40 inches; wing, 4.05; culmen, .50; tail, 2.52; tarsus, .95. Clear blue gray above, most of the feathers olive green in the center; forehead yellow-olive; short superciliaries and malar stripes yellow; breast blue gray with olive centers to the feathers, more or less yellow in the middle, throat black bordered by yellowish white and abdomen and under tail coverts white; wings

black, tertials and secondaries, coverts bordered with blue gray, outer primaries with olive yellow; tail with middle feathers black bordered with gray and olive, two outermost pairs largely white on inner web, next pair with a yellowish white patch.

Geographical Range.—Southern Chili, Patagonia and Falkland Islands. Not seen by the Princeton naturalists.

PHRYGILUS CARBONARIUS (d'Orbigny and Lafresnaye).

Emberiza carbonaria d'Orbigny and Lafresnaye, Mag. de Zool. 1837, p. 79 (Patagonia).

Description.—Adult male, 284106, Biol. Survey Colln., U. S. Dept. of Agriculture, Bahia Blanca, Buenos Aires, Argentina, December 13, 1920. Total length, 5.40 inches; wing, 3.00; culmen, .40; tail, 2.40; tarsus, .78. Above, dark plumbeous to plumbeous gray, darkest on the crown, edges of feathers minutely frosted with brown, those of the back with brownish tips and black shaft streaks; wings and tail black fading to dull brown, edges of remiges and wing coverts pale gray; beneath, blackish plumbeous, flanks frosted with pale gray; bill and feet yellow.

Female entirely different (1806 Colln. Alexander Wetmore, same locality as above, November 4, 1903, S. A. Adams); drab above with brown centers or shaft stripes to the feathers, rump washed with brown, wings and tail dull brownish black, the former slightly edged with paler; below, dull white with narrow brown shaft stripes to feathers of breast, sides, flanks and under tail coverts, bill and feet as in male.

Geographical Range.—Bolivia and Argentina to Patagonia (Rio Negro).

Does not range south as far as the region explored by the Princeton expeditions.

PHRYGILUS FRUTICETI (Kittlitz).

Fringilla fruticeti Kittlitz, Kupf. Voy. 18, 1833 (near Valparaiso).

Fringilla erythrorhyncha Lesson, L'Inst. ii. p. 316 (1834).

Emberiza luctuosa Eydoux and Gervais, Mag. de Zool. 1836, pl. 71 (Chili).

Description.—Adult male, 7569 P. U. O. C., Upper Rio Chico, Patagonia, March 24, 1897. Total length, 7.30 inches; wing, 4.00; culmen, .50; tail, 3.20; tarsus, .95. Above, general color bluish slate, feathers of the crown and back with broad black centers and brown tips or edgings; wings and tail black with brownish or whitish edgings; greater and median wing coverts white at the tip, forming two wing bars; below, throat and upper

breast black, breast and flanks gray, middle of abdomen white, all these parts with white or gray frosting formed by paler tips to the feathers which are doubtless lost by abrasion; under tail coverts gray and white, feet and bill reddish in skin.

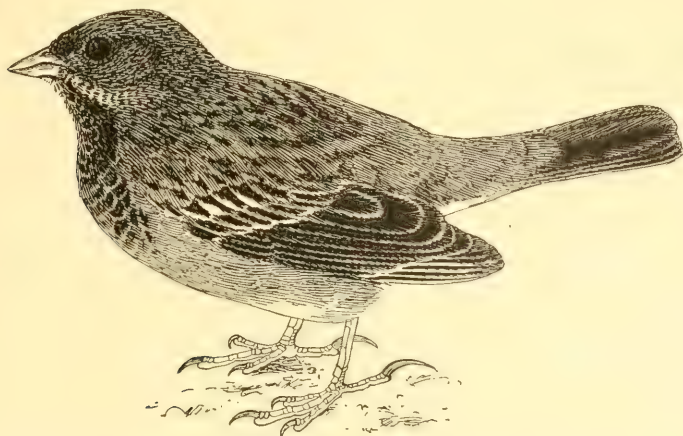


FIG. 406. *Phrygilus fruticeti*, ♂ 7570. About three quarters natural size.

Female, 7993 P. U. O. C., Arroyo Eke, Patagonia, April 17, 1898 (A. E. Colburn), very different; ashy brown above with dark brown centers to the feathers, becoming clear slate on the rump, the same color showing on the back of the neck, a post-ocular streak gray, ear coverts brown, wings edged with brown and showing two white bars; under parts gray, whiter on the throat and abdomen, sides, flanks and under tail coverts strongly buff; breast speckled with brown.

Geographical Range.—Bolivia, Peru, and Chili to Patagonia (Rio Negro, Santa Cruz).

Mr. Peters found this bird numerous at Huanuluan in late September, October and November in flocks, characteristic of the thick bushes. The flocks often contained as many as fifty birds, the same flock frequenting the same locality. They seemed to feed entirely on green food. (Bull. M. C. Z. lxx. No. 9, p. 335.)

Durnford found it breeding in the lower Chubut Valley.

The Princeton expedition found this species at Arroyo Eke, April 17; Upper Chico, March 24, and Rio Gallegos, May 31.

Hudson says: "This is a pretty and elegant bird, though possessing no bright colours; they go in pairs in the warm season, but in the winter unite in flocks often of two or three hundred individuals, and have a graceful undulating flight. On being approached they utter a series of low ticking notes, and occasionally a long squealing cry. The male has also a very agreeable song, which continues all the year. In pleasant weather the song is heard at all hours, on cold and cloudy days only at sunset. The bird usually soars from his perch, and utters his song while gliding down with wings



FIG. 407. *Phrygilus fruticeti*, ♀ 7993. About three quarters natural size.

depressed and tail outspread. When I first heard it, I was startled with its wonderful resemblance to the song of the Correndera Pipit (*Anthus correndera*); it is, however, much shorter and more powerful. This species is quite common in the thickets along the Rio Negro, in the neighbourhood of Carmen, but following up the river appears to become much rarer." (P. Z. S. 1872, p. 537.)

PHRYGILUS UNICOLOR (d'Orbigny and Lafresnaye).

Emberiza unicolor d'Orbigny and Lafresnaye, Syn. Av. Mag. de Zool, 1837, p. 79 (Cordilleras of Peru and Bolivia).

Emberiza rustica Gray, Gen. Birds, iii. App. 17, 1849.

Phrygilus geospizopsis Sclater, P. Z. S. 1885, p. 160 (Bogota).

Chlorospiza plumbea Phil. and Landbeck, Arch. Naturg. 1864, p. 47.

Description.—Adult male, 60089 Acad. Nat. Sci. Phila., Mts. above Chambo, Ecuador, April 17, 1911, S. N. Rhoads. Total length, 5.50

inches; wing, 3.40; culmen, .42; tail, 2.50; tarsus, 1.00. Above, uniform bluish slate, paler below, feathers of the crown with dusky centers; wings and tail black with bluish slate edgings.

Female (60075 A. N. S. Phila., Mt. Pichincha, Ecuador, May 1, 1911. S. N. Rhoads) entirely different, dark brown coarsely streaked with blackish above, below white, tinged with buffy on the throat and breast and everywhere strongly streaked with blackish, wings and tail blackish brown, bordered with paler.

Geographical Range.—Andes from Colombia to Chili.

Genus *DIUCA* Reichenbach.

Type.

Diuca Reichenbach, Av. Syst. pl. lxxviii. (1850) . *Fringilla diuca* Molina.

DIUCA DIUCA (Molina).

Fringilla diuca Molina, Sagg. St. Nat. Chil. p. 249, 1782 (Chili).

Dolichonyx grisea Lesson, L'Inst. ii. p. 316, 1834.

Pipilo cinerea Peale, U. S. Expl. Exp. Birds, p. 123, 1848 (Valparaiso to Santiago).

Diuca vera Burmeister, J. f. O. 1860, p. 255 (Cordilleras of Mendoza).

Description.—Adult male, 10683 A. N. S. Phila., Chili. Total length, 7.30 inches; wing, 3.62; culmen, .58; tail, 2.90; tarsus, 1.00. Upper parts, sides and a broad breast band clear gray; throat, abdomen and under tail coverts white and the region of the crissum chestnut. Wings dull blackish with gray edgings; tail similar but the outermost pair of feathers with a long white area on the inner web and middle part of the outer web white, the next three (or four) pairs with white tips on the inner webs.

Female tinged with brownish when the male is gray.

Geographical Range.—Chili south to Straits of Magellan, and across the Andes to Lake Nahuel Huapi.

Not seen by the Princeton expeditions.

A. A. Lane, who studied it in Chili, says: "This bird competes with the Pileated Song-Sparrow for being the most abundant species in Chili, and in the central and southern provinces fairly beats it. It is a resident, I think, everywhere.

"I do not exactly know its northern limit, but, so far as I could ascertain, it stretches up to the commencement of the desert portion of Chili, occurring up to the base of the Andes as far as cultivation extends. In the

south it is equally numerous, occurring all through Chiloe, and probably in the southern archipelagos and on the mainland to the Straits, at least as far as cultivation is carried on, for it does not appear to find sustenance in the natural forest. It is not so plentiful on the coast as further inland.

"It is called by the Chilians 'Diuca.'

"The sexes are of about the same size, and alike, though as a rule the female is not quite so handsome as the male. They prefer civilization, and are invariably found about homesteads or tillage. In the cold season they may often be seen feeding on the ground in large flocks; they separate on being disturbed. They feed on various seeds, especially grass seeds, also berries, etc. About Santiago they nest from the end of September to Christmas, varying further south according to climate. At Valdivia the season is five or six weeks later than as stated above. As soon as the time of year comes on they display a good deal of energy, and, like most Finches, are very active in their nesting operations, and vociferous as well. The nest is sometimes completed in three days or less, according to circumstances, and if the birds are not unsettled or disturbed.

"The nest is placed from 3 to 8 feet from the ground, and as a rule well concealed in a thick bush or branch.

"The eggs are laid to the number of three, being usually completed within two days from the laying of the first egg.

"The song consists of a succession of loud clear notes, rather uneven in harmony and abrupt; but though it cannot be classed with the performances of other Finches, still it is constantly uttered in a cheerfully boisterous manner, which does a great deal towards enlivening some Chilean localities, where the singing birds are few. This bird is easily kept in cages, and ought to breed regularly in an aviary." (Ibis, pp. 19-20, 1897.)

Mr. Peters found them abundant "about Lake Nahuel Huapi, particularly in semi-open situations or along roadsides. About the middle of February they began to gather in flocks of twenty-five or more individuals." (Bull. M. C. Z. lxx. No. 9, p. 335.)

DIUCA MINOR Bonaparte.

Diuca minor Bonaparte, Consp. Av. i. p. 476, 1850 (Patagonia).

Description.—Adult male, Patagonia Colln. of S. Pozzi (in Princeton University), March, 1894. Total length, 6.10 inches; wing, 3.28; culmen, 3.55; tail, 2.55; tarsus, .80. Exactly like *D. diuca* except for smaller size and lesser amount of white on outermost tail feathers.

This specimen, as well as specimens of the other species in non-nuptial plumage, is much shaded with cinnamon brown above, while the tertials are edged with the same.

Geographical Range.—Argentina and eastern Patagonia (San Antonio-Peters).

Not found in the territory covered by the Princeton explorations.

Hudson's account of this species is as follows: "This pretty little bird is exceedingly lively in its motions, social and quarrelsome in habits, and in winter often goes in flocks of several hundred individuals. The flock is usually widely scattered when on the ground and bushes; and when flying the birds incessantly pursue each other through the air, uttering all the time a soft chirp. The song of the male is the sweetest I have heard in Patagonia, with two exceptions—that of the *Cardinal amarillo* (*Gubernatrix cristatella*) and of the *Calandria blanca* (*Mimus triurus*). In summer, when these Finches live in pairs thinly scattered over the country, the song of the male is the first indication of the approach of day. But in winter, when they live in companies, their great singing-time is in the evening, when the flock has gathered in some thick-foliaged bush, which they have chosen for a winter roosting-place. This winter-evening song is very different from that heard in summer, the notes appearing sharper, and uttered in a wild and rapid manner. A little after sunset they burst into a concert, which lasts several minutes, sinking and growing louder by turns." (P. Z. S. 1872, p. 537.)

Genus GUBERNATRIX Lesson.

Type.

Gubernatrix Lesson, Compl. Buff. viii.

p. 295 (1837) *Coccothraustes cristata* Vieillot.

GUBERNATRIX CRISTATA (Vieill.).

Coccothraustes cristata Vieillot, N. Dict. d'Hist. Nat. xiii. p. 531, 1817 (Paraguay), based on the "Crestudo amarillo" of Azara.

Description.—Adult male, P. U. O. C., La Plata, March 1898. Total length, 8.00 inches; wing, 3.80; culmen, .60; tail, 3.68; tarsus, .95. Above, yellow olive, feathers of the back with central black streaks and a black crest on the crown; a broad chrome yellow band from nostril over the eye; lores dusky; under parts lemon chrome with a black throat patch, and sides of body and breast shaded with olive, wings blackish, bordered with pale

yellowish buff, broader and lighter on tertials and greater coverts; middle tail feathers blackish, next pair with a yellow patch at the tip, next three pairs yellow and outermost pair yellow with a dusky tip; bill bluish horn color, legs horn color.

Female (No. 10734, Acad. Nat. Sci. Phila.) grayer above, yellow on face and sides of neck replaced by white, breast and sides largely gray, yellow restricted to the center of the abdomen and under tail coverts.

Geographical Range.—Southern Brazil and Paraguay through Argentina to northern Patagonia.

This is a bird of the Pampas which extends its range into the valley of the Rio Negro but no farther south.

Genus PASSER Brisson.

Type.

Passer Brisson, Ornith. ii. p. 71 (1760) . . *Fringilla domestica* Linnæus.

PASSER DOMESTICUS (Linn.).

Fringilla domestica Linnæus, Syst. Nat. ed. 10, i. 1758, p. 183 (Europe).

Description.—Adult male, La Plata, Argentina, January, 1898, Princeton University collection. Total length, 5.90 inches; wing, 3.00; culmen, .50; tail, 2.34; tarsus, .80. Above, top of head and lower back gray, back chestnut with black streaks, sides of neck chestnut, running up to the eye and down behind the ear coverts, which are pale gray, cheeks white; wings and tail blackish edged with brown; wing coverts chestnut, tips of median row white, forming a wing band; whole throat and middle of breast black, feathers slightly edged with gray, sides gray, passing into white on the abdomen and under tail coverts; feet horn color, bill black.

Female ashy brown, paler below, back broadly streaked with black.

Introduced.

Family ICTERIDÆ.

Sharpe, Cat. Bds. Brit. Mus. xi. p. 310 (1886); Hand List Birds, v. p. 483 (1909).

Genus MOLOTHRUS Swainson.

Type.

Molothrus Swainson, Fauna Bor.-Am. ii. 1831

(1832), 277 *Fringilla pecoris* Gmelin
= *Oriolus ater* Boddaert.

MOLOTHRUS BONARIENSIS BONARIENSIS (Gmelin).

Tanagra bonariensis Gmelin, Syst. Nat. i. p. 898 (1788) (Buenos Aires).

Molothrus niger Gould, Voy. Beagle, Birds, p. 107, 1841 (La Plata).

Molothrus sericeus Burmeister, Reis, La Plata, ii. p. 494 (1861).

Description.—Adult male, 8721 P. U. O. C., La Plata, Argentina, October, 1895. Total length, 8.10 inches; wing, 4.20; culmen, .74; tail, 3.00; tarsus, 1.10. Above and below, bright glossy purplish black, becoming steel blue on the lower abdomen, under tail coverts, wings and tail; bill and feet black.

Female dark ashy above, paler below (pale drab), wings and tail narrowly edged with whitish.

Geographical Range.—Brazil, Paraguay, Uruguay, Argentina and Patagonia (Rio Negro to Straits of Magellan).

Not seen by the Princeton Naturalists.

Mr. Peters says this bird "appears to be migratory in western Rio Negro. It appeared at Huanuluan for the first time on September 28. They were not uncommon at Maquinchas and at Puesto Horno. A young male, nearly fully grown, was shot at Bariloche on February 17; his foster-parent seemed to be a female of *Trupialis m. militaris*." (Bull. M. C. Z. lxx. No. 9, p. 336.)

White says of it in Argentina: "This bird is common all over the Republic. It is usual for them to lay in the nests of other birds, such as *Troglodytes furves*; indeed I have never known these lazy architects to take the trouble to construct their own dwellings.

"The number of eggs varies in different nests, as likewise their coloration. All, however, have a white ground; but some are dotted with large rufous-brown spots, whilst others are entirely devoid of them; but the typical shell is sprinkled over thickly with minute reddish-brown spots on a white ground." (P. Z. S. p. 601, 1882.)

Hudson writes of it in Argentina: "When summer is over these birds congregate in vast flocks, and are then seen for many days flying north; but it is not probable that they migrate to any great distance. They pass with a rapid, low, undulating flight, one flock behind the other, their wings producing a soft and agreeable sound. The Blackbirds feed on the ground, following the plough in spring to pick up the worms, and are fond of keeping round cattle in the pasture, frequently alighting on their backs. The song of the male is, when wooing, accompanied by strange

gestures and actions. Swelling and ruffling his feathers like a turkey-cock, and frequently suddenly taking wing and flying directly away from the female, and performing a wide circuit round her in the air, he sings all the time. The song begins with remarkable hollow, internal notes, ending with others loud and clear. The female is homely in appearance in her dull mouse-coloured suit, and has no song but a low chattering, not often uttered, and always appears very indifferent to the advances of her beautiful glossy partner. In the evening, when they settle on the trees to roost, they sing until it is quite dark. From their great numbers, their singing at such times often sounds like the rushing of a strong wind among the trees. When disturbed on their roost at night the males repeat their song as they take wing; they also settle on the trees on rainy days to sing, continuing their concert for hours.

"It is well known that, like the European Cuckoo, it deposits its eggs in the nests of other birds. But the Cuckoo lays but one egg in a nest, and its peculiar habit possesses one thing in common with the instincts of other animals; it is regular and definite, ensures the safety of the young, and, for all that has yet been established to the contrary, is unchangeable as are the laws of matter and force. The instinct of the Blackbird is, on the contrary, unsettled and indefinite and truly a 'monstrosity.' . . .

"In autumn, when the Blackbirds congregate in flocks of tens of thousands, so that the ground where they feed seems carpeted with black, and the trees where they alight to have a black foliage, I often wonder that the little birds in whose nests they lay do not become extinct, or all but extinct, by their means." (P. Z. S. 1870, pp. 548-550.)

Genus AGELAIUS Vieillot.

Type.

Agelaius Vieillot, Analyse, 1816, p. 33 . *Oriolus phæniceus* Linnæus.

AGELAIUS THILIUS CHRYSOPTERUS Vieillot.

Agelaius chrysopterus Vieillot, Nouv. Dict. Hist. Nat. 1819, 34, p. 539 (Paraguay).

Agelaius thilius chrysocarpus Auct. (nec *A. chrysocarpus* Vig.).

Description.—Adult male, 284265 Berazategui, Buenos Aires, Argentina, June 29, 1920, Alexander Wetmore. Total length, 6.82 inches; wing, 3.40; culmen, .88; tail, 2.70; tarsus, 1.02. Black with a slight gloss; lesser upper and under coverts bright yellow, bill and feet black. In

winter plumage the feathers are margined with brown and buff above, head and hind neck uniform brown, with a pale buffy median stripe on the crown and whitish superciliaries; below, feathers frosted with pale buff edgings. All of these buff and brown tips are later lost through abrasion, the uniform black plumage resulting.

Female brown above with black centers to the feathers of the back and head as in the winter male, below buff with an ashy tint, feathers with median black streaks; under lesser wing coverts and edge of wing yellow.

Geographical Range.—Paraguay through Argentina to Patagonia (Chupat and Rio Negro).

Apparently this species does not reach the country covered by the Princeton explorations.

Mr. Peters at Rio Negro found it "a common resident, confined, however, to the reed beds. In western Patagonia it appears to be migratory, since none were seen at Huanuluan prior to the general rush of migrants September 6. . . The flocking process was commencing here early in January but by the latter part of the month the species had apparently withdrawn from that section. Late in December it swarmed about the edges of the great *juncal* at Neluan, twenty miles south of Maquinchao." (Bull. M. C. Z. lxx. No. 9, p. 336.)

Genus TRUPIALIS Bonaparte.

Type.

Trupialis Bonaparte, Consp. i. p. 429 (1850) . *Sturnus militaris* Linn.

TRUPIALIS MILITARIS MILITARIS (Linnæus).

Sturnus militaris Linnæus, Mantissa Plant. p. 527, 1771 (Straits of Magellan).

Sturnus albifrons Boddaert, Tabl. Pl. Enl. p. 7, 1783.

Sturnus loyca Latham. Ind. Orn. i. p. 325, 1790 (Chili).

Description.—Adult male, P. U. O. C. 7573. Palaike, Patagonia, January 18, 1898, A. E. Colburn. Total length, 9.90 inches; wing, 5.12; culmen, 1.32; tail, 3.70; tarsus, 1.50. Above, black, feathers broadly edged with grayish brown, producing a streaked appearance; rump gray with transverse black bars on the feathers; central tail feathers similar, others with traces of transverse gray bars on the outer webs; wings dull blackish brown edged with whitish and tertials barred with black; sides of face and neck black, superciliaries and spot below the eyes white; lores,

throat and breast bright scarlet as also the bend of the wing; feet and bill horn color, the upper mandible blackish.

Female, P. U. O. C. 7575, Rio Gallegos, Patagonia, May 29, 1896, much browner above and below, throat buffy white and scarlet area confined to the middle of the breast.



FIG. 408. *Trupialis militaris*, ♂ 7574. About one half natural size.

Winter birds of both sexes are much browner than breeding specimens, the buff portions of the feathers being lost by abrasion.

Geographical Range.—Chili and Patagonia (Rio Negro to Straits of Magellan) and Falkland Islands.

Mr. Peters found it a common resident in western Rio Negro, usually in grassy situations. The bright scarlet breast of the male is easily distinguished at two hundred yards. (Bull. M. C. Z. lxx. No. 9, p. 337.)

Specimens were obtained by the Princeton expedition at Mt. Observation, February 21, and Rio Gallegos, May 29, all frosted with light tips to the

feathers. One taken at Palaike January 18 had lost all these tips through abrasion.



FIG. 409. *Trupialis militaris*, ♀ 7575. About one half natural size.

A. A. Lane says: "This bird, known in Chili as the 'Loica' or 'Loyca,' is plentiful in all the southern provinces and extends southward to Chiloe and the adjacent mainland, wherever suitable localities exist.

"The female may perhaps be a trifle smaller than the male. Both sexes vary in colouring, the male attaining more brilliant plumage after the moult. The iris is black. They frequent the hills in Central Chili, and in other localities prefer large open expanses of grass-land or agricultural districts. They appear to be more terrestrial than arboreal in their habits, and I should say they fed altogether on the ground. They are to a great extent insectivorous, though they also eat various grasses and, I believe, fruit.

"I never found the nest of this bird, but was told it is built as a rule in

one of the scattered bushes which occur frequently on hills or plains in Chili." (*Ibis*, 1897, pp. 26-27.)



FIG. 410. *Trupialis militaris*, ♀ 7575. About one half natural size.

Genus NOTIOPSAR.

Type.

Notiopsar Oberholser, Proc. Biol. Soc. Wash.,

34, p. 136.

Turdus curæus Molina.

Curæus Sclater 1862 (nec *Cureus* Boie 1831).

NOTIOPSAR CURÆUS (Molina).

Turdus curæus Molina, Sagg. St. Nat. Chile, p. 345, 1782 (Chili).

Sturnus aterrimus Kittlitz, Mem. Acad. Petersb. 1835, p. 467, pl. 2 (Valparaiso).

Leistes niger Swainson, Anim. in Menag. p. 304, 1837.

Description.—Adult male, 284940 Biol. Survey Colln., U. S. Dept. of Agriculture, Concon, Valparaiso, Chili, April 25, 1921, Alexander Wet-

more. Total length, 9.8 inches; wing, 5.05; culmen, 1.28; tail, 4.05; tarsus, 1.40. Entire plumage black with a slight purplish gloss; bill and feet black.

Geographical Range.—Central and southern Chili and southern Patagonia.

Not seen by the Princeton expeditions.

Cunningham states that at Punta Arenas: "We saw numerous small flocks of a black starling, or Troopial (*Curæus aterrimus*), which we at a later period found to be one of the few land-birds common in the western region of the Strait and western Patagonian Channels, besides occurring abundantly in Chili, where it is frequently kept as a cage bird on account of the facility with which it may be taught to talk. Ordinarily its notes, when in the wild condition, are sufficiently harsh, but on one occasion I saw one that was singing most melodiously on the top of a low tree. Possibly this may have been an escaped bird, the accomplishment having been acquired in a state of captivity." (Nat. Hist. Str. Magell. 1871, pp. 169-170.)

Lane writes: "This species is abundant throughout central and southern Chili, and is generally known as the 'Tordo' (Thrush). These birds prefer agricultural districts, and in winter-time are usually seen in flocks. They feed chiefly, if not altogether, on the ground, eating insects, grain, and fruit, and are very rapacious. I had one alive for some time in an outhouse in Rio Bueno; it was much like a specimen of the Corvidæ, being rather familiar and cunning; it did not appear afraid of other birds, and could defend itself ably with its powerful bill and claws. The rats did not take it, although I believe only for its strength and pluck they would have done so, as it had been winged slightly and could fly little in consequence; however, one day it got out and made good its escape into some dense covert in spite of determined pursuit.

"They nest in thick shrubs or bushes about six to eight feet from the ground. I found only one clutch of eggs, which were broken. The average number is four or five; they are of a light bluish ground, with a few black patches or specks." (Ibis, 1897, pp. 27-28.)

POSTSCRIPT

The present volume, covering the birds of the Princeton Patagonian Expeditions, has been subject to long but unavoidable delays.

The original authors died about the time of the appearance of Part II, and arrangements were made with the present writer to continue the work. Part III, the manuscript of which had been completed, was published just as it was left by the authors, while Part IV was based largely upon their notes.

The World War then caused a long delay in continuing the work, and it has only now been possible to bring out the concluding part. While a few notes and extracts from published works left by the authors have been incorporated, where possible, the entire manuscript of Part V has been written by the undersigned, and he desires here to express his obligation to Dr. Alexander Wetmore, Assistant Secretary of the Smithsonian Institution for invaluable assistance in working out the ranges of the Argentine and Patagonian species and deciding which should be included in the present work. He is further indebted to Mr. James Lee Peters, from whose Report on "Some Summer Birds of Northern Patagonia" many quotations have been taken. To the Academy of Natural Sciences of Philadelphia, the U. S. National Museum, and the Museum of Comparative Zoölogy, he is indebted for the loan of specimens of species not contained in the Princeton collection, from which original descriptions have been drawn up for this report.

All of the colored plates, prepared under the direction of the late Mr. Scott, pertain to birds treated in the last part of the work. Unfortunately there is no record of what specimens were used in making these plates. Some of the names engraved upon them do not, apparently, apply to the species figured, while some of the species are obviously extralimital so far as Patagonia is concerned. All of these plates have been included, however, and the names corrected or brought up to date in the explanations.

In view of the many recent publications relating to the birds of Patagonia and their distribution, it seems hardly advisable to discuss this subject here, but simply to refer the reader to the leading works in which the information may be obtained.

Dr. Alexander Wetmore's admirable report¹ on his explorations in southern South America contains a detailed account of the life zones of Argentina and Patagonia, with the more characteristic species of birds listed, and also much information on the life histories of the Patagonian birds additional to that contained in the present work.

Mr. Peters' paper above mentioned is another valuable contribution to Patagonian ornithology, while the many papers of Dr. Frank M. Chapman in the Bulletin of the American Museum of Natural History discuss the distribution of the South American avifauna as a whole. The publications of Dr. Roberto Dabbene, the leading resident ornithologist of Argentina, which have appeared for the most part in "El Hornero," contain much critical discussion of the bird life of that country and of Patagonia.

I am requested to say that Part V, of Volume II, has been printed by the aid of a grant from the Carnegie Institution of Washington.

WITMER STONE.

ACADEMY OF NATURAL SCIENCES,
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¹'Observations on the Birds of Argentine, Paraguay, Uruguay, and Chile.' Bull. U. S. National Museum 133. 1926.

PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE II.

GEOCICHLA CUNICULARIA CUNICULARIA (upper figure).
GEOCICHLA ANTARCTICA (lower figure).



EXPLANATION OF PLATE III.

UPUCERTHIA DUMETARIA DUMETARIA (upper figure).
UPUCERTHIA DUMETARIA DARWINI (lower figure).



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE IV.

UPUCERTHIA SATURATION (both figures).

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PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE V.

UPUCERTHIA DUMETARIA DARWINI (upper figure).
UPUCERTHIA VALIDIROSTRIS (lower figure)



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE VI.

CINCLODES NIGRIFUMOSUS (upper figure).
CINCLODES TACZANOWSKII (lower figure).



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE VII.

CINCLODES^{*} PATAGONICUS PATAGONICUS (upper figure).
CINCLODES OUSTALETI (lower figure).



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE VIII.

CINCLODES PATAGONICUS RUPESTRIS (upper figure).
CINCLODES OUSTALETI (lower figure).



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE IX.

CINCLODES OREOBATES (upper figure).

CINCLODES FUSCUS (lower figure).



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE X.

ENICORNIS PHÆNICURA (both figures)

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PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE XI.

AGRIORNIS MARITIMA (both figures).

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PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE XII.

AGRIORNIS MARITIMA LEUCURA (upper figure).

AGRIORNIS MARITIMA MARITIMA (lower figure).



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE XIII.

MUSCISAXICOLA HATCHERI.

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PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE XIV.

MUSCISAXICOLA CAPISTRATA.

(VOL. II)



PATAGONIAN EXPEDITIONS: ZOÖLOGY.

EXPLANATION OF PLATE XV.

PHRYGILUS PRINCETONIANUS (upper and middle figures).
PHRYGILUS MELANODERUS (lower figure).







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